THE DENTAL DIGEST

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CONTRIBUTED ARTICLES

THE CASTING PROCESS AS APPLIED TO INLAYS OF GOLD AND OTHER DENTAL USES

J. G. LANE, D.D.S., PHILADELPHIA, PA.

The DENTAL DIGEST has been so fortunate as to receive from Dr. Lane a series of articles on the above subject. When so much that is uncertain, wrong, hazardous and even foolish is being said and written about gold inlays, these articles will be doubly welcome as instructive, conservative and sane.—EDITOR.

So much interest and attention have recently been directed toward the casting process, with its manifold applications to dentistry, that we assume that every practitioner in the dental profession to-day has at least a general knowledge of the work and the principles involved. On this assumption we deem it unnecessary to present the method as a whole. Many have already become proficient in the process; others are learning its enticing wiles, and we suppose that nearly all are experimenting in casting, and will likely continue to do so for a long time.

The range of the casting process is all the way from the tiniest inlay to a base for a full denture. It is thus seen to be applicable to much

of our work. The work is very enticing; it may easily be made the means of reducing the manual labor and fatigue that go hand in hand with our dentistry, and it is in many cases a means of accomplishing very satisfactory results. But these very conditions may be the very undoing of the process—which is, in itself, one of the best and most useful that the restorative feature of operative dentistry has had in many years. With all its great range and possibilities, it also has its judicious limit of application and usefulness, and must not be looked upon as being capable of taking the place of all other methods for the same general lines of operations. The method, indeed, does lighten our labors, and any method that is capable of gaining this result is justifiable from this standpoint alone *if it does not sacrifice results.* Any method—no matter how enticing, or easy, or apparently applicable—that will not in every case get the best results that would otherwise be possible, must be either cast aside or so modified that such results are obtained. The casting process is by no means a lazy or careless man's method. The precision possible with this process will be followed by perfect results only when the utmost good judgment and carefulness are used in the details of every stage of the work. The little defects that characterize our efforts are almost invariably in exactly the right positions to cause the most trouble. Little details must therefore be guarded with the same jealousy as major principles.

The principal use to which we may apply the casting process is that of making gold inlays. Other uses are that of casting crown foundations, cusps on shell crowns, bridge dummies, pyorrhea splints, bases for artificial dentures, and an almost limitless variety of miscellaneous uses.

We had for many years been making gold inlays by various other methods, but the gratifying accuracy of adaptation that we now enjoy is possible only with the casting process; and this same accuracy and perfection of adaptation constitutes the most important factor in the invulnerability of an inlay. The use of gold inlays cannot be considered as taking the place of porcelain inlays. Each has its place in dentistry, and neither will properly take the place of the other. But as gold inlays will not fracture, and it is possible to obtain a greater accuracy of adaptation with gold than can be had with porcelain (and thus reduce the surface cement line to a greater minimum with the former than with the latter), we consider it good practice in inlay operations to give gold precedence over porcelain up to the extreme degree of esthetic limits. But we can in no case gainsay the preference of porcelain where esthetic conditions are imperative. A more permanent operation is possible with a gold inlay than with a gold filling. The

reasons for this are abundant. From a therapeutic standpoint we know that a gold filling is the very poorest filling that we can insert. Its efficiency as a tooth saver depends upon its being a plug that is so closely adapted to the cavity margins and walls as to preclude the possibility of leakage—either to moisture or gases. (It is just possible that we would be horrified if we knew what percentage of new gold fillings did not possess these supposedly present requisites.) Its contact with the enamel and dentine renders no immunity whatever to these tissues by therapeutic or chemical action. The amalgams, gutta-perchas, and so-called cements, do possess these values, particularly amalgams and cements. In the latter material is the additional feature by which, when it is placed in the cavity in plastic condition, that cavity is hermetically sealed and its interior rendered immune as long as it remains thus covered. It would therefore seem that in the cements we have an almost ideal filling material. However, the fact that it will not long withstand mastication and the action of the fluids of the mouth, curtails its usefulness to what we might designate as "temporary work." In the gold inlay we have the immunity brought about by the cement; we have the cavity hermetically sealed, and have gotten rid of the objectional "temporary" surface condition by using a surface material that is malleable to such an extent that its margins may be manipulated with a burnisher. The cavity is thus protected by cement, the cement protected by gold, and the gold is able to take care of itself. In a properly executed gold inlay operation we have a repair that is ideally perfect from every viewpoint except from an esthetic one, and, if judiciously and suitably placed, this objection is reduced to a minimum.

As previously stated, the scope or range of application of gold inlays has its limit. It is not wise to cast gold inlays for pit cavities or any very small cavities—either masticating or inter-proximal—except for very special reasons. Ordinarily such cavities can be filled more advantageously with gold fillings. In buccal or labial cavities where gold is to be placed, we believe an inlay possesses more merit than a foil filling, and would advise an inlay, unless such cavity is extremely small. Aside from the durability of an inlay operation in these sensitive and troublesome cavities, our patients will bless us for the humane features of the operation. The cast inlay process is not a rapid one, and the time consumed renders it prohibitive for very small work. The usefulness of cast gold inlays is most apparent in the large masticating and compound cavities in the molar and bicuspid teeth. In these masticating cavities we need the durable surface that a fused mass of gold possesses and the accuracy of adaptation gotten only by

the casting method. In the compound cavities we usually find such irregular shapes as are practically impossible to be fitted by any other method. By the casting method it matters not what the irregularity of the cavity may be. So long as the pattern will draw without distortion, the inlay will fit. This cannot be said of any of the other methods. A most important factor in cast inlay work is the extremely malleable condition of a pure gold inlay. By reason of this condition its margins may be burnished immediately after it has been cemented into the cavity until all trace of the cement line will have been pinched off. No other method of making a gold inlay provides an edge that will admit of the same possibility in burnishing. It may be argued that this same condition of extreme malleability of a pure gold cast inlay makes it unfit to withstand the violence of mastication. This will, indeed, be the case unless in the final finishing of the inlay we render it otherwise. This is easily and effectively accomplished by a good strenuous burnishing with an engine burnisher of steel (or preferably agate). A still harder surface is obtained by using a corrugated engine burnisher. Or even the density obtained by this could be increased by the use of a mechanical, electric or automatic mallet. It is only the masticating surfaces of inlays that would require such density, and these can easily be reached by any of the methods and instruments mentioned.

In order that inlays may be successful, it is important that the cavities which are to receive them be properly prepared. Unless this is done, the most perfectly made inlay is likely to be short-lived. There are certain fundamental principles which govern the preparation of cavities for gold inlays. Some of these principles apply with equal force to all cavity preparations; others differ widely from the principles which apply to cavity preparations for gold fillings or porcelain inlays. The next articles in this series will consider cavity preparation from gold inlays, from the viewpoints of "extension for prevention," "extension for convenience," "extension for anchorage," "locating the cavity margin" and the "marginal angle."

When a man gets religion aright, his horse soon finds it out.

Some people are like a million-dollar check on a ruined bank. They look big, they promise great things, but you cannot cash them.—*Success Magazine.*

HOW TO MAKE GOLD FILLINGS—(Continued)

J. V. Conzett, D.D.S., Dubuque, Iowa

In no class of cavities does the Black system of operative dentistry shine with such conspicuous brilliancy as in cavities in the approximal surfaces of bicuspids and molars. These cavities were always dreaded by the average gold operator before the advent of the Black method, but now, thanks to the simplicity and efficacy of this method, these cavities are filled with ease and with the assurance of permanent results.

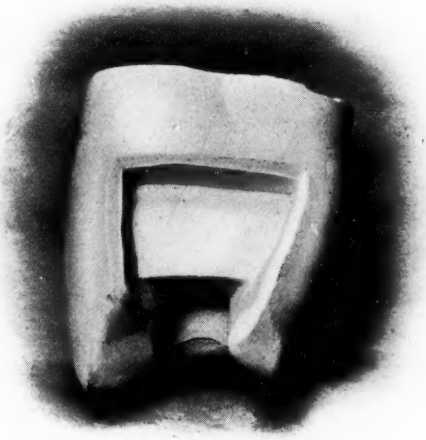


Fig. 1.—View of the approximal surface of a bicuspid showing the occlusal seat and axial wall.

Cavities in the approximal surfaces of bicuspids and molars are approached through the occlusal surface. The old method of attempting to fill these cavities by simply excavating the decay in the approximal surfaces, made it very difficult to fill them because it was impossible to reach all of the interior surfaces of the cavity with the plugger point, and the gold was insufficiently condensed in many places. There was also a general faulty adaptation to the surfaces of the cavity and a consequent large percentage of failures.

With the present method all of this uncertainty and difficulty is done away with; the cavity is so opened up from the occlusal surface

that all of the surfaces of the cavity are perfectly accessible. In these cases we will find the beginning of the carious process immediately above the contact point, or below on a lower tooth; unless the progress of the decay has been very extensive, the marginal ridge of enamel is still intact and the occlusal surface of the tooth in fairly good condition. However, upon close examination of the large majority of these cases, particularly the bicuspids, we find the fissures open and very easily extended. If the decay is extensive enough to permit it, the enamel margin can be best broken down with a chisel. With the mallet in the hands of your assistant, and by intelligently following along the lines of the enamel cleavage, rapid progress can be made in opening up the cavity and obtaining the outline form. After as much of the overhanging enamel has been broken down as is possible in this way a No. 2 round bur can be introduced under the enamel and run along the fissure, drawing the bur up toward and through the surface as you progress. In this way you can very rapidly and with very little pain open up along the entire length of the fissure. The cavity should be extended through the entire length of the fissure in upper bicuspids, and through the central ridge of enamel to the opposite pit in lower bicuspids; while in molars the cavity should be extended to the central pit. In all cases the margin should be carried to a point where a smooth margin can be made. After the groove has been cut the length of the fissure, break down the enamel with chisels and further widen the step with inverted cone burs; usually the numbers 35, 37 or 39 will be found the proper ones to use, according to the width of the step desired. This must be determined by the conditions presenting in the case at hand. We remember that cavities in the mesial surfaces of the upper bicuspids and molars and cavities in the distal surfaces of bicuspids and molars in the mandible require deeper and wider occlusal steps than do cavities in the opposite surfaces of the same teeth, by reason of the fact that in closing the jaw the force which the teeth of the mandible exert upon the teeth in the maxillary is from the back forward. In other words, the lower teeth exert their force more upon the mesial surfaces of the upper teeth, and, consequently, the greatest force which comes upon the lower teeth is upon their distal surfaces. The gingival seat must be carried below the normal margin of the gum so that the margin of the completed filling will be below the gum margin. This can best be extended by using the No. 2 round bur to groove into the dentine just at the dento-enamel junction, and then, with a chisel, break down the enamel as you proceed, until the desired depth is obtained. With a No. 37 or No. 39 inverted cone bur the gingival seat should be made perfectly flat and as broad as consistent with pulpal safety. The occlusal

seat must always be made sufficiently deep, for upon that portion of the cavity preparation we depend entirely for our anchorage in this system of operative procedure. Frequently we will see the step in this surface so shallow that it does not penetrate the dentine. The step should always reach through the enamel into the dentine, and the depth which it penetrates the dentine must be determined by the stress of occlusion which the completed filling will have to resist.

Study conditions. This motto should be made a part of our operative education. In our Wedelstaedt Club, at one of our meetings,

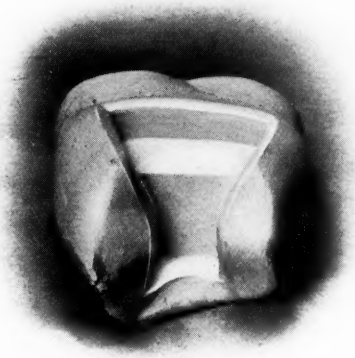


FIG. 2.—Occlusal and approximal surface of a bicuspid, showing cavity formation.

little slips were distributed to all of the members, bearing the motto, "Study Conditions," and they were posted in a conspicuous position in the operating rooms of the members. No one can tell you just what to do in all cases. Each case must be studied by itself and in the light of the principles which we are trying to elucidate, each one must be operated upon in a manner which shall best meet its individual conditions.

So make the occlusal step through the enamel and as deeply into the dentine as the conditions demand. The lingual and buccal margins must be carried out sufficiently far to carry the margins into self-cleansing territory and the axial walls of the cavity must be paralleled, so that we will have flat seats and parallel walls, approaching the box form as nearly as possible. It is not necessary to have grooves or pits; indeed,

they are only a source of danger and increase the difficulty of properly filling the cavity. It is difficult for the beginner to understand that such a cavity will retain the filling; but a little practice and observation will assure anyone that a cavity of this kind, properly filled with a thoroughly condensed gold filling, will resist the stress of mastication and the inroads of caries better than any other method that has ever been presented to the dental profession. Indeed, in this day of the gold inlay, the very best preparation that the inlay man can have is the Black cavity preparation. In making a gold inlay in these cavities I

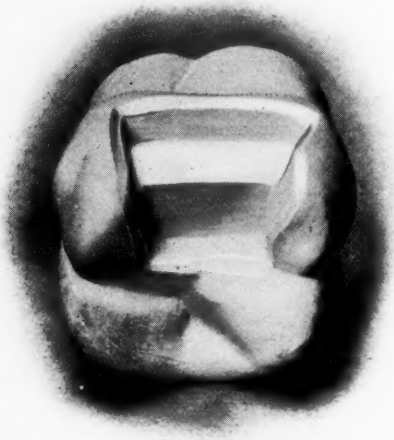


FIG. 3.—Mesial and occlusal surface in molar showing de ails of cavity formation

do not depart from the preparation I make for a filling, and the success or the failure of the gold inlay is going to depend on cavity preparation. The cavo-surface angle all around the cavity must be carefully beveled as in all cavities to be filled with gold, and this is as true of the gingival margin as it is of any other margin. It is a little more difficult to perfectly bevel this margin, but with properly beveled cavo-surface angle trimmers it can be accomplished.

Fig. 1 shows a bicuspid with the approximal surface illustrated. This will show the depth of the occlusal seat and the parallel axial walls.

Fig. 2 is a view of the occlusal surface showing the extent to which the cavity has been carried distally and bucco-lingually.

In this (3) we have the same surfaces of a cavity in an upper molar.

GETTING THE EXACT DIMENSIONS OF THE REQUIRED ARTIFICIAL TEETH

George W. Clapp, D.D.S., New York

The previous articles * have shown us how to prepare wax bites of the proper vertical heights; how to build them out labially and buccally to give the face proper expression; and how to mark on them the locations of the necks of the centrals, the distal angles of the upper cuspids and the distal sides of the upper second molars. As an aid to the mechanical side of plate-work we have learned to determine how great should be the combined bite and shut of the anteriors. With this knowledge at hand, it is easy to determine just what mould of teeth is required.

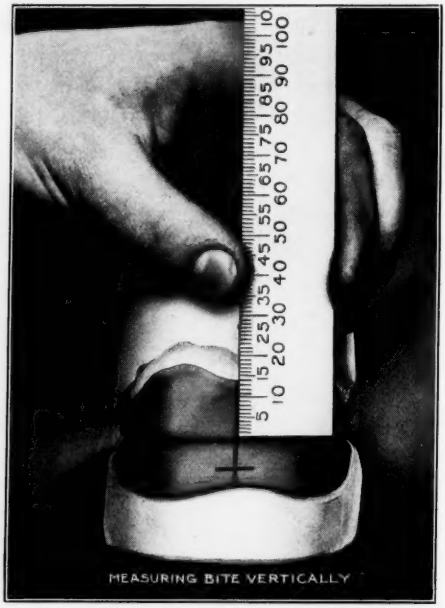
The only appliance needed for this purpose is a flexible millimeter measure. On a foot-rule there is usually no division less than 1-16 of an inch, and this is too large a dimension for measuring teeth. After long study the writer adopted a millimeter as the most convenient unit of measurement. The millimeter measure should be flexible, so that it may be bent about the bite. There is outside evidence that the use of the millimeter was wise, because, soon after the writer brought out the method here outlined, he received a letter from a Southern dentist saying that he had devised a similar method of measuring teeth several years before. He had no doubt this method was based on his; in this he was in error, since the writer knew of no similar method.

With the millimeter measure, get the distances between the marks on the bites in millimeters; turn to tables where artificial teeth are described in millimeters, and select a mould of teeth most nearly conforming to the requirements. Note the number of the mould and order by that number. That is all there is to the method. It saves time enough and errors enough to pay for itself every time it is used.

Let us examine the steps a little more in detail. We should get first the length of upper centrals. To do this, measure between the High-line and the labio-incisal angle of the upper bite. This does not give the full length of central; it gives the length of the part that is to show; above this part of the tooth must be a collar that extends into the vulcanite, when there are to be rubber gums in front. Some moulds of artificial teeth do not have collars, but the neck of the tooth itself then extends into the rubber. So our artificial central should be at least a millimeter longer than the distance from the High-line to the labio-in-

* January, February and March Dental Digests.

cisal angle. Suppose the distance from the High-line to the labio-incisal angle is 9½ millimeters; we add 1 millimeter for the part of the tooth in the rubber, and learn that our desired central should be 10½ millimeters long.



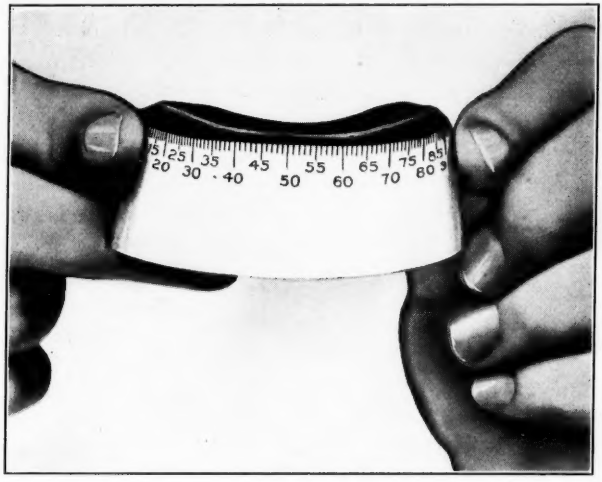
A millimeter is equal, for all practical purposes, to 1-25 of an inch. It is evident, therefore, that a variation of ½ millimeter either way in the length of the central will make no serious difference. We may, therefore, decide that our central should be from 10½ to 11 millimeters long. This gives us a wider range of moulds from which to select to meet our other requirements. Let us note down this dimension, "Length of central, 10½ mm.," while we seek out the other requirements.

By measuring between the pin-hole and the labio-incisal angle of the upper bite, we learn what is the greatest combined bite and shut the artificial tooth may possess and still go properly to place. If the ridge is thin linguo-labially and the teeth are to set close to it, this dimension should not be increased. But if the teeth are to set well away from the ridge, or the ridge is thick linguo-labially, this dimension may be increased a millimeter. This has been explained.*

* Dental Digest for March.

Suppose the distance from the pin-hole to the labio-incisal angle of the bite is 7½ millimeters. The combined bite and shut of the central then should not be greater than 7½ millimeters. We may note this as the second of our requirements. If the bite and shut are correct in the central, this dimension in the other teeth will probably be so.

Get next the width of the six anteriors taken together. This is more important, for the present, than the width of the central alone, since the anteriors as a whole strike the eye first when the plate is seen. Measure between the vertical marks made at the corners of the mouth. This is the distance from the distal angle of one upper cuspid to the distal angle of the other *when the teeth are set up.* This is quite different from the distance between these angles as these teeth lie flat on the wax on which they are sold. This poine should be borne in mind. We may now note as our third requirement " Combined width six anteriors, 45 millimeters."



Measuring bite horizontally to get combined width six anteriors and full set of 14.

Now measure between the marks made to locate the distal sides of the upper molars by * bending the rule close about the outside of the upper model at the incisal angle. Suppose this distance to be 108 millimeters. That is the width of the full set of 14 teeth, set up. Like the width of the anteriors, this is quite different from the width of the teeth as they lie flat on the wax on which they come from the dealer.

* DENTAL DIGEST, February 1909, page 123.

When we have noted this dimension, we find our requirements to be as follows:

Length upper central, 10½ mm.
Combined bite and shut, not over 7½ mm.
Combined width 6 anteriors, 45 mm.
Combined width full 14, 108 mm.

These dimensions are much more valuable for selection than mere sight of the teeth could be. It is well known that the sight of many teeth confuses the one who is selecting. The eye does not perceive actual dimensions—it sees only proportions. A certain mould may "look about right," when really not a single dimension fits the requirements. Having in hand the actual dimensions of the required teeth will help us wonderfully.

The dimensions of the lower teeth are very easily gotten for use in the plan of selection which follows. To get the length of central, measure from the low-line to the rest-line on the upper bite. The lower anteriors under-bite the upper anteriors and extend as high as the rest-line. Suppose that when we have measured this distance and added 1 millimeter for collar, we find the desired length of central to be 11 millimeters. A pin is thrust through the lower bite to locate the surface of the ridge in the same way that the surface of the upper ridge was located.* We measure for combined bite and shut and find the distance to be 8 millimeters. We then note the requirements for the lower central as follows:

Length, 11 mm.
Combined bite and shut, not over 8 mm.

If the lowers are being selected to articulate with uppers, being made at the same time, these dimensions are sufficient, as will be shown. If the lowers are selected for a plate which is being made alone, all the dimensions must be gotten.

With the dimensions of the required teeth at hand, we may follow either of three methods. The first is to measure artificial teeth as they lie on the wax. The only dimensions which come right by this method are the length and the combined bite and shut of the centrals. The widths of the anteriors and of the full set will not be right. The second course is to measure pictures of artificial teeth as they appear in catalogues. This is subject to the same errors as the first course, with a few additional errors due to engravings not always being exact. The

* See THE DENTAL DIGEST, March, 1909, page 218.

only other course is to have access to tables where artificial teeth are measured in millimeters to meet such requirements. Only one tooth manufacturer has so far published such tables of moulds, and from those tables we will select.* The dimensions here given are not exact for all teeth, because teeth vary a trifle in shrinkage during baking, but they are very close. Thus, the combined width of six anteriors may vary a millimeter or so either way from the dimensions given here, but even with this variation the accuracy is greater than is obtainable by any other method.

Great care was taken to get these dimensions correct. After repeated measurings of the teeth, a Bonwill circle was cut in cardboard for each mould and the teeth set to it on the bite. They were then measured, and the dimensions here given were verified. There may still be slight errors in the dimensions, but almost endless pains were taken to have them correct.

Our requirements for upper teeth are as follows:

Length, 10½ mm.
Combined bite and shut, not over 7½ mm., but as near it as possible.
Combined width 6 anteriors, 45 mm.
Width full set of 14, 108 mm.

Page No. 301 shows a table giving the dimensions of some of the plain vulcanite teeth, uppers, and we may study it a moment to note the arrangement. The first column gives the mould numbers; each mould is described by the figures in the remainder of its line. This column is important, because when we have found the teeth of proper size, we want to order them by the mould number.

The next column gives the length of the central in the mould. This is the column used first, since the length of central is the most convenient dimension with which to begin.

The third column gives the combined width of the six anteriors when set up. By using this column next we can select much more rapidly than if we bothered with the width of the central at this time. There are usually several moulds having anteriors of approximately correct width, and when we learn what moulds they are, we may select from among them the one we prefer. This dimension corresponds to the distance between the marks at the corners of the mouth.

* The Dentists' Supply Company in the Twentieth Century Mould Book. The writer of this article spent nearly a year working out the methods here described and their application in the forms of tables. The publishers of this book spent $15,000.00 in presenting this information, as applied to their products, to the profession.

The fourth column gives the width of the full set of 14 teeth, set up. This dimension corresponds to the distance between the marks for the distal sides of the second molars.

The next column gives the combined bite and shut of the central incisor. This measurement corresponds to the distance between the pinhole and the labio-incisal angle of the upper bite. Taken with the three columns just preceding, it gives the most important dimensions of the teeth.

When the combined bite and shut have been found, the length of bite and the width of the central will help in making the selection more exact. These dimensions are given in the next two columns.

The wide column headed "Articulates with Lower Moulds" contains information of great value when selecting lower teeth to go with uppers. There are only a few lower moulds which are of the correct width to articulate with any given mould of uppers. For instance, Mould 5, shown in the fourth line of the "Medium Long and Medium Wide" division of this table is a typical medium mould in all respects. Yet out of the 103 lower moulds given in this book, only four are of the correct widths, in both anteriors and posteriors, to articulate well with it. It is a convenience to have the numbers of these four moulds at hand, and this column gives them.

The last column gives the page of the book on which each mould in the table is illustrated and described. By turning to these pages we may learn the smallest details about the moulds.

All the moulds in the table are divided into three groups: "Narrow," "Medium Wide" and "Wide." This is to further facilitate selection. Only the two wider divisions of the table of "Medium Long Moulds" are reproduced here because of lack of space.

Now that we understand the table, let us select a mould to meet our requirements. We want a central 10½ millimeters long. We find in the "Medium Long and Medium Wide" section of the table nine moulds of practically the desired length. Let us examine them. Mould 7, the first of these, is of the correct width in the anteriors, but too wide in the full 14. Mould 24 is too narrow in the anteriors. Mould 2 is of the correct width in the anteriors, but too narrow in the full 14; the same is true of Mould 35. Mould 79 has the proper length of central, the right width of anteriors and full 14, and the correct bite and shut. If the central from it is properly set against the ridge, it will bring the cutting edge at the labio-incisal angle of the bite, the neck at the High-line, the distal angles of the cuspids at the corners of the mouth and the distal sides of the second molars at the marks made for them. To get this mould, order by the mould number.

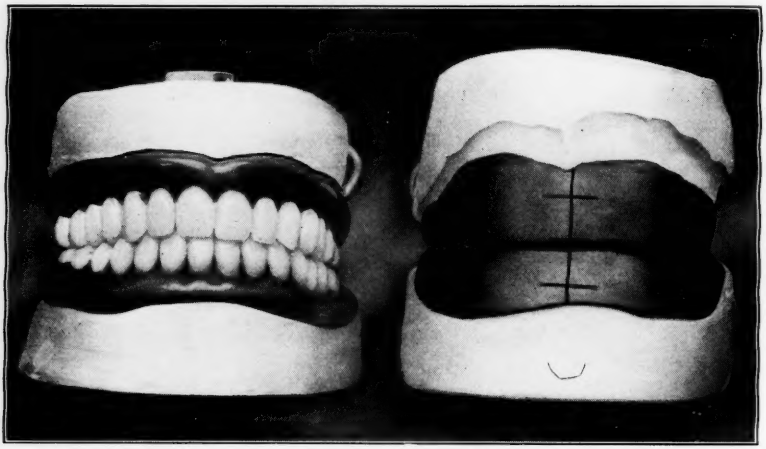
(Reproduction of a portion of the tables where moulds are arranged by size)

MEDIUM LONG MOULDS—*Continued.*

(ALL DIMENSIONS ARE IN MILLIMETERS.)*

Mould No.	Length of Central	Approx. width 6 anteriors set on Bonwill Circle	Approx. width full 14 set on Bonwill Circle	Combined Bite and Shut of Central	Bite of Central	Width of Central	Articulates with lower moulds †	Cut and description on page
			MEDIUM LONG AND MEDIUM WIDE.					
13	10	43	107	7	3	7½	65-3-21-5	33
20	10	44	106	6½	3	7½	53-1-5-24	34
88	10	45	108	6½	3½	7½	9-3-2-24-70	34
5	10	44	105	6½	3	7½	a5-2-3-21-53	34
6	10	45	106	5½	2½	7½	a6-3-21-53-9-8	34
72	10	47	115	6½	3	7½	72-73-43	35
23	10	45	109	6	2½	7¼	40-5-65	35
7	10½	45	110	7½	4	7½	1-5-92	35
24	10½	43	108	7½	3½	7	1	35
2	10½	45	104	6½	3½	7¼	3-8-2-10	35
35	10¼	45	106	7½	4	7½	a35-65-5	36
79	10¼	45	108	7½	4	7½	79-5-6	36
39	10½	43	103	7	2½	7½	8-2-10-7	36
25	10½	44	107	6¼	3	7½	5-3-65-16-53	36
92	10½	45	110	7½	4	7½	92-5-103	37
9	10½	45	107	7½	4	7½	6-5-40-79-92	37
40	11	44	105	7½	4½	7	8-2-3-7	37
28	11	45	106	5½	2	7½	65-16-3-11	37
29	11	45	109	7	3½	7½	1-16-5-103	38
63	11	44	103	5½	2½	7½	8-7-10	38
65	11	45	106	6½	3	7½	65-3-11-21	38
12	11	46	106	6½	3½	7½	5-6-16-79	38
46	11¼	44	105	9½	3½	7½	3-5-11-16	39
66	11½	45	114	8½	3½	7¼	66	39
103	11½	47	114	9	4	7¾	103-92	39
			MEDIUM LONG AND WIDE.					
75	9¾	50	116	6½	3	9½	75-69-19	39
47	10½	46	110	6	2½	8	6-5-28-79-40	40
71	10¼	45	108	6	3	8	71-5-6-43-79	40
69	10¾	48	115	6½	2½	8½	69-75-19-72-6	40
1	11	46	107	8½	4	7½	6-28-5-79	40
87	11	46	106	8½	4	8	87-6-16	41
104	11	48	119	8½	4	8½	104-69-101-105-107	41
105	11	47	116	8½	4	8½	105-101-104-107-69	41
107	11¼	49	119	8½	4½	8½	107-104-101	41
			LONG AND MEDIUM WIDE.					
26	11½	45	106	6½	3	7½	11-16-3-65-78	42
78	11½	46	106	7½	4	7½	78-16-5-11	42
81	11½	45	108	9½	5½	7½	6-5-16-13	42
10	11¾	45	105	8	4	7½	11-16-5-65-78	42
8	12	45	106	7½	3½	7½	11-16-78-3	43
76	12	45	109	8½	4	7½	5-6-28-16	43
38	12	45	105	7	3½	7½	11-16-74-65-5-3-78	43
56	12	45	109	8½	4½	7¾	6-5-28-16	43
49	12	48	107	7½	4	8	49-16-6-5-13-28-78	43
86	12	48	109	8½	4	8	6-5-19-12-28	44
96	12	50	118	9½	4	8½	96-12-18-69	44
50	13	47	109	8½	4½	8	12-13-6-78-16	44
95	13	48	113	9½	5	8	95-12-13-49	44
74	13½	46	108	9	5	7¾	74-6-16-12-13-11	44

As we wish to select lowers to articulate with this plain upper, we follow down the column headed "Articulates with Plain Lower Moulds." Here we find, from the black-faced type in which Figure No. 79 is set, that lower Mould No. 79 was made especially to articulate with this upper, and if the central in lower Mould No. 79 is of the right length (which can be determined by turning to the descriptions of lower moulds, where they are tabulated in the same way as the uppers), this mould will doubtless suit us. If it does not, we may choose from between Moulds Nos. 5 and 6 that mould which is best suited to meet the requirements of the lower teeth. Because these lower moulds are all of the right width to articulate with this upper set, there is no necessity for us to determine on the bite, the width of the anteriors or the width of the full 14s. The two dimensions, "length of central" and "combined bite and shut," are sufficient.

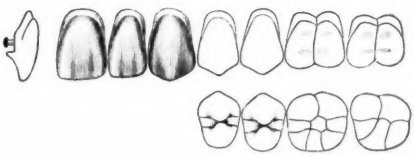


On the right, the bites measured in the preceding illustrations. On the left, teeth Mould 79 selected from these measurements and set to the form of these bites. The teeth conform almost *exactly* to the requirements.

A careful plate-worker, however, will not feel that he has satisfied all the requirements when he has selected teeth of the right length and width with proper mechanical adaptation. He is desirous that the outlines of the moulds harmonize with the face. To make sure of this, he will desire to see an illustration of the mould. By referring to the last column, he will find that on Page No. 39 Mould No. 79 is illustrated and described, and when he turns to that page he finds it is illustrated as below. If the outline, as shown here, is not satisfactory, he may

choose from among Moulds Nos. 25 and 35, taking the one which has the outline most to his liking, since they all meet his mechanical requirements.

HOW MOULDS ARE ILLUSTRATED AND DESCRIBED



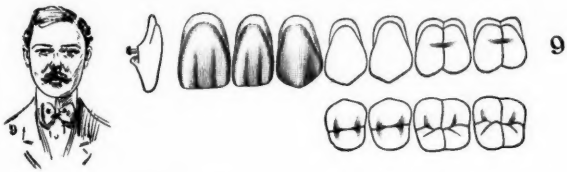
MOULD 79. *Dimensions of upper centrals: length* 10½ *mm., width* 7⅔ *mm., bite* 4 *mm., shut* 3 *mm., ridge-lap* 3½ *mm. Approximate width of* 6 *anteriors,* 45 *or* 46 *mm. Approximate width of full* 14, 108 *or* 109 *mm. Combined bite and shut of central,* 7½ *mm. Required vertical space second molar,* 5½ *mm. Collar.*

A strictly medium mould, the centrals showing good breadth with rounding curves. They have their greatest width at the junction of the incisal and middle thirds. The mesio-incisal angles are separated and interdental spaces of good width show between the necks. The laterals are practically as long as the centrals.

The bicuspids are of medium length, with good occlusal surfaces, prominent cusps and well defined sulci. The molars are shorter and show a shorter bite. The lingual cusps on the posteriors are quite thick.

Anteriors from this mould combine well with posteriors from moulds 9-13-48-75-69-12 to form 14's. Plain lower mould 79 was made especially to articulate with this mould. This mould articulates well with lower moulds 79-5-6 to form 28's.

Indications. For faces of medium length and good width, with plump features. For cases where the labio-incisal angle of bite comes about 7½ mm. below the surface of the ridge and the lip is raised about 9½ mm.



MOULD 9. *Dimensions of upper centrals: length* 10⅔ *mm., width* 7⅔ *mm., bite* 4 *mm., shut* 3 *mm., ridge-lap* 3⅔ *mm. Approximate width of* 6 *anteriors,* 45 *mm. Approximate width of full* 14, 107 *or* 108 *mm. Combined bite and shut of central* 7½ *mm. Required vertical space second molar,* 6 *mm. Collar.*

This mould is middle way between the smallest and the largest in this class. It has a strong outline, with wide neck, and shows rather wide inter-proximal

DESCRIPTION MOULD 9—Continued.

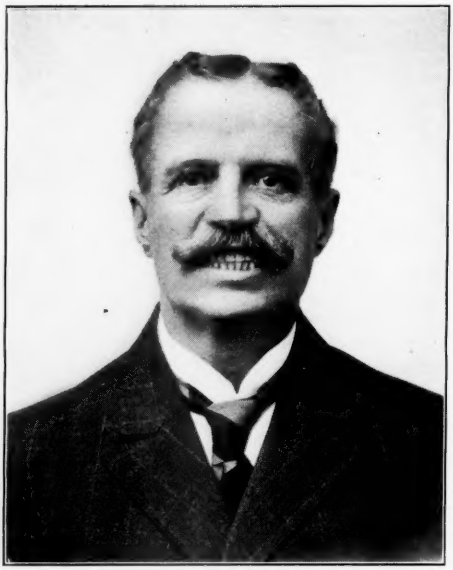
spaces between the centrals. The centrals are made to set on a noticeable slant to the ridge. The laterals are of good size, and the cuspids of medium size in proportion to the centrals.

The bicuspids are medium long, with about medium large occlusal surfaces, and plainly defined sulci. The molars are also of good length and have fair sized grinding surfaces.

Anteriors from this mould combine well with posteriors from moulds 79-13-12-23-35-39-78-87 to form 14's. This mould articulates well with lower moulds 6-5-40-79-92 to form 28's.

Indications. This mould will be found valuable in cases where the labio-incisal angle of bite comes about 7½ mm. below the surface of the ridge, but where from mechanical reasons, such as the elongating of the lower incisors, it is necessary to use a short shut and long bite.

The ridge-lap is not much hollowed, and sets outside the ridge as well as underneath it. For faces of medium length rather wide in the upper part, and with chins of good width.



Patient wearing teeth shown on page 302. The anteriors, both uppers and lowers, are of correct lengths to prevent pink rubber gums showing in smiling. It is believed that the teeth harmonize with the face in length, width and outline. Time required to select uppers and lowers after bites were marked, 5 minutes.

We have now spent a good deal of time studying the selection of artificial teeth, following proper bite making, and in closing this series

of articles it may be well to ask what we have learned which shall repay the study and justify the use of the method in the future. It seems to the writer that these results can be summed up as follows:

First. Our own knowledge of artificial teeth has been greatly increased. Since the writer began the studies which led to these articles, he has learned things about artificial teeth which nobody ever took the pains to teach him, and which are of great practical value. By means

Patient for whom uppers and lowers were selected in 5 minutes after bites were marked. The upper anteriors just cover the area of plate exposed in smiling. The lowers for the same case are shown in the next illustration.

of these studies we have learned to know what we want in artificial teeth; this has not always been the case in the past.

Second. We are now able to specify to the tooth clerk just what moulds we want—a thing impossible before. We may send or phone or write with a certainty of getting what we require.

Third. We need not send models to the dealers. Sending the mould number answers every purpose. It also greatly facilitates orders being filled with rapidity and accuracy at the depot.

Lowers in the case shown on the preceding page. When the lower lip is depressed, the festoons about the anteriors are barely exposed. The only rubber shown is that in the inter-proximal spaces.

Fourth. We economize time. It takes a little time to learn to order moulds by this method, just as it takes a little time to learn to do anything else; but the writer has met many dentists who are pleased with this method, and their reports are that after the first two or three cases they were enabled to choose moulds to their complete satisfaction in a very few moments.

Fifth. There is no necessity to grind the teeth, provided we have used care in selecting.

Sixth. We get better artistic and mechanical results with very much less labor.

Seventh. Anatomical articulation of artificial teeth will soon be the standard method. It is now required in the colleges, and we older dentists must learn it or we shall soon be outclassed. This form of articulation will be greatly facilitated if we know first how to properly select the teeth for any given case.

If this series of articles takes from plate-work some of the uncertainties and complications it has had in the past, and makes it anything like as interesting as it has become to the writer, the object of these articles will be achieved.

Artificial uppers selected to go with natural lowers. It is believed these teeth are harmonious in every particular with the face. The very light color which they here exhibit is merely a printing effect.

A COMING PROSTHETIC ARTICLE

THE next article in this series will show a simple and useful means of determining what the outline of a mould should be to harmonize with the patient's face. This plan will follow the excellent suggestions of Dr. F. K. Berry, Milwaukee, and will show how any dentist with average mechanical ability may apply them.

RESPIRATORY OBSTRUCTION IN RELATION TO THE TEETH

EDWARD W. FOX, B.S., M.D., TRINIDAD, COLO.

THERE are no two professions more closely associated than rhinology and dentistry.

The oral cavity and the nasal fossæ are so closely related that pathological changes in one are very frequently productive of changes in the other.

The rhinologist who does not appreciate the important rôle that the teeth play in the production of nasal and accessory sinus diseases, and likewise in otological practice, is overlooking a most prolific source of causative factors. Conversely it is imperative that the dentist, and especially the orthodontist, be familiar with the disastrous influences that obstructive nasal conditions have upon the integrity and irregularity of the teeth.

The nasal fossæ are two large irregular cavities. Normally they are divided equally by the nasal septum and should be so constructed that no two parts approximate. This is the ideal nasal cavity which nature so intended; it is, however, a condition which we do not frequently find. Where there is present an approximation of surfaces we have a catarrhal condition manifested by an increase of secretion. If there is a marked approximation there is produced an obstructive condition. As the obstruction continues, nasal respiration is prohibited and the pernicious habit of mouth-breathing results.

The developmental period when the tissues are yielding, and before the bony structures of the face have become firmly united, is especially the period when the pernicious habit of mouth-breathing leaves its indelible impression.

Speaking of abnormal development resulting from mouth-breathing, Kyle says: "The repeated contractions of the muscles controlling the nasal orifices necessitated by the forced nasal respiration, bring about a drawing of the facial muscles, and by this drawing down the upper jaw is retracted and the contour of the upper arch altered. The hard palate then, instead of forming a perfect dome, has its anterior portion tilted and the upper portion of the base of the nose drawn in."

The results of mouth-breathing are both local and constitutional, (1) locally by the mechanical pressure brought about by the direct impaction of air upon the roof of the mouth, ultimately determining the contour of the alveolar arch of the superior maxillary bone; (2) constitu-

tionally—the remote influences are those operating upon the thoracic and gastric organs.

With the local influences we are more concerned in this article. There has been a diversity of opinion between the rhinologist and the dentist as to the rôle played by such obstruction.

There are, no doubt, a number of factors operating in the causation of irregularity of the teeth, yet it is, I believe, the consensus of opinion among orthodontists that nasal obstruction is markedly present in 75 per cent. of the cases presenting irregularity of the alveolar arch, and is usually found to some extent in a large proportion of the remaining 25 per cent.

The pathological condition which is the most potent cause of nasal obstruction, is the enlargement of the pharyngeal and faucial tonsils, the former commonly known as adenoids. The conditions situated within the nose are the deflected septum, enlarged turbinals and polypi. The pharyngeal tonsil, which is usually the offending factor, is a normal physiological glandular structure. It undergoes atrophic changes before adult life. It becomes pathological only when it gives rise to symptoms. Being composed of glandular elements and externally of thin connective tissue trabeculæ, it undergoes very readily vascular changes from both direct and indirect causes.

Any constitutional condition presenting a want of vascular tone, viz.: anemia, syphilis, tubercular diathesis and lymphatism or those diatheses associated with increased permeability of the vessel walls, readily produce either a periodic or a constant enlargement of this pharyngeal tonsil, with consequent obstruction of the air passage.

The presence of adenoids is almost pathognomonic. The characteristic listless expression, the presence of mouth-breathing, the parted lips, the frequent colds in the head, and the confirmatory signs elicited by digital examination.

It is necessary, in order that the orthodontist accomplish satisfactory and gratifying results, that this condition receive its proper treatment.

The treatment is both medicinal and surgical. If the condition is seen before inflammatory organization has resulted, the local application of medicinal agents is in some measure efficacious. Surgical measures are, however, more certain and lasting.

The age at which adenoids should be removed is, as I have previously stated, during the developmental period or about five or seven years of age.

If the symptoms are marked they should be removed earlier. Infancy has no contra-indication.

BUSINESS BUILDING

"Rendering Professional Services; Not Selling Materials"

Articles in this department are devoted to the business side of a dental practice, such as the getting and holding of patients, the advancing of fees to a competence producing basis, the education of patients and other allied subjects. Dentists are invited to submit articles on these or kindred subjects.

WHAT DENTISTS ARE DOING TO EDUCATE PATIENTS

Dr. Charles Askowith, 110 Tremont St., Boston, Mass., publishes a twelve-page booklet "The Why and How of the Teeth." It is well printed on good paper. The matter in the book is the best the editor of this magazine has ever seen on the subject: in his opinion it is better is some respects than that offered by The National Association Booklet, in that it tells the story more fully and in a more easily understood way.

The editor suggests that dentists interested in educating their patients send to Dr. Askowith for a copy of this book (enclosing return postage). The editor hopes also that Dr. Askowith may be willing to furnish copies of this book to fellow practitioners at a reasonable price. Here are a few paragraphs from the book. Space forbids reproducing more.—EDITOR.,

"BAD teeth cause bad digestion, and bad digestion often causes bad teeth. If you have one you are pretty certain to have the other. In any case of bad digestion, it is exceedingly worth while to have the dentist examine your teeth; for, unless the teeth are put in good shape, it is useless to hope for a permanent cure, and very often the repairing of the teeth is enough in itself to stop indigestion and similar troubles.

WHY SHOULD WE PAY ATTENTION TO THE TEETH?

Because a good set of teeth is worth a fortune to us in health, attractive appearance, happiness and longer life. If we neglect the teeth we are pretty certain not to have these blessings in full measure. The mouth is the gateway to health and happiness.

WHY DO WE NEED GOOD TEETH?

First, for health's sake. Without good teeth, we cannot chew our food properly, and the food is unfit for digestion in the stomach. The

result is indigestion and constipation, poisonous decomposition by germs in the intestine, and liability to the whole brood of dangerous diseases —such as appendicitis, etc.—that come from this self-poisoning through wrong eating. To have good health we must masticate thoroughly, and to masticate thoroughly we must have sound teeth.

Second, for the sake of appearance and personality. Not only is a perfect set of teeth beautiful in itself, but it gives beauty and symmetry to the entire face, and adds to the attractiveness and magnetism of one's personality.

Third, for perfect speech. The teeth play a very important part in proper articulation. Some sounds cannot be made if the front teeth are lacking; and, if the set is lost, the enunciation is thick and indistinct. A good voice, and ease and fluency in talking, depend upon good teeth.

WHAT DIFFERENCE DOES IT MAKE IF A FEW TEETH ARE MISSING?

A very considerable difference. Even the loss of a single tooth is a serious matter. According to scientific authority, every tooth lost means the loss of a year of life. If only one tooth is lacking, some portion of the food will escape thorough chewing, particles of food will remain and set up decay, and it will be much more difficult to keep the teeth clean.

IS IT POSSIBLE TO PREVENT THE LOSS OF TEETH?

In most cases it is. The teeth of the permanent set are meant to last through life. It is only through neglect or mischance that the teeth are ever lost. Whatever teeth are in sound condition when you start to take care of them can certainly be saved by continuous daily care, as explained below. If a tooth pains or a cavity is discovered, never allow it to be extracted unless you are told by a competent dentist that it is impossible to save it. A natural tooth is always preferable to an artificial one. An honest, conscientious dentist will never advise extraction if the tooth can possibly be saved, and will use every resource of dentistry to preserve it if he is not interfered with. Select a skilled, reliable dentist whom you can thoroughly trust, and then permit him to do what he thinks is best for your teeth. It will cost less in the end and make you happier.

WHAT CAN THE DENTIST DO FOR A POOR SET OF TEETH?

In practically every case the dentist can end whatever tooth troubles you may have, and can restore the teeth and the mouth to a healthy

condition and good working order. A thorough cleaning will remove accumulations of tartar and other decaying deposits which are working ruin to the teeth and the general health. By means of crowns and fillings, teeth not too far gone for saving can be made entirely serviceable; and where teeth must be extracted, the adjoining teeth can be bridged. By thus employing the latest resources of modern dentistry, a poor set of teeth can be so fitted up and repaired as to give the owner all the enjoyment and efficiency of a complete set of natural teeth.

IF MY TEETH ARE GOOD, WHAT USE HAVE I FOR THE DENTIST?

If you are so fortunate as to possess a good set of teeth, you have very little use for the dentist. But if you hope to continue having very little use for him, you should visit him at least once in six months. If you have been taking good care of your teeth, it will take only a few minutes for the dentist to give your teeth a thorough examination and cleaning, such as you can never give yourself, and thus nip in the bud any decay or cavity that may be starting.

WHY DO THE TEETH DECAY?

Because of wrong methods of eating, failure to keep the teeth clean and general poor health. Decay is caused by germs that grow in the mouth. If a little food accumulates between the teeth, it serves as a breeding-ground for these germs, which multiply rapidly and attack the teeth.

IS DECAY OF THE TEETH A SERIOUS MATTER?

It is not only serious, but dangerous. Dental decay is a foul and dangerous process. It not only ruins the teeth, but continually manufactures poisons in the mouth. These poisons give a foul odor to the breath, and are mixed with the food eaten and swept down into the stomach and intestines, where they cause digestive troubles and are likely to produce dangerous maladies. The vital resistance is lowered, and one is much more liable to catch infectious diseases, including tuberculosis. The only remedy lies in having the teeth attended to at once.

HOW CAN DECAY BE PREVENTED?

By avoiding mushy foods, pastries and poor candies, that injure the teeth and leave remnants that encourage the growth of germs; by preferring dry and hard foods, that scour and clean the teeth when well chewed; by chewing very thoroughly all foods, including liquid

foods, thus keeping the teeth free from food remnants, and giving the teeth the exercise which they need to keep healthy, and by habitual daily care of the teeth.

HOW SHOULD THE TEETH BE CARED FOR?

By thorough cleaning of the teeth several times daily with water and toothbrush, and once daily with the help of a dentifrice. Tooth powder or paste should be used just before going to bed, and the cleaning should then be the most thorough; for the danger from germs is the greatest during sleep, when the mouth is least active.

Never imagine for a moment that a child's temporary teeth can be safely neglected because they do not last long, anyway. Every word of advice here given as to daily care of the teeth, stopping of decay and cavities, and regular visits to the dentist, applies as much to children as to grown-ups. To neglect your children's teeth is an even greater crime than to neglect your own, for it stores up endless misery for their later years.

THE NATIONAL ASSOCIATION FOLDER FOR EDUCATING PATIENTS

The National Dental Association has published a six-page booklet, envelope size, which is the most authoritative matter issued in this line. It is very well written, except the first three paragraphs, which suffer from the attempt to say much in a few words and are too classical for many readers who need the information most. These booklets are intended for general distribution and may be had at a cost of fifty cents per hundred, by addressing the Secretary of The National Dental Association, Dr. C. S. Butler, 267 Elmwood Avenue, Buffalo, N. Y. Dentists are advised to procure some of these books for local use. The information is largely in the form of questions and answers. Some of the questions follow. The answers are short, clear and excellent.—EDITOR.

ARE THE TEMPORARY TEETH OF MUCH IMPORTANCE?

THEY are, and should be cared for from their first appearance until they are displaced by their permanent successors. A child needs teeth for mastication as much as does an adult. If the first teeth are decayed, chewing is painful and is avoided, and the habit of swallowing food unchewed becomes established. The results of this practice are indigestion and many stomach and bowel disorders. If decayed and painful first teeth are prematurely extracted, the result is, generally,

irregularity and crowding of the second set, they being thus made unsightly, inefficient for chewing and more liable to decay.

HOW LONG SHOULD THE SECOND SET OF TEETH LAST?

To the end of life.

HOW DO WE LOSE TEETH?

Chiefly by decay and loosening.

WHAT CAUSES TEETH TO DECAY?

Decay is caused by the fermentation of the remains of food clinging between the teeth and in their depressions, with the production of an acid.

CAN DECAY BE PREVENTED?

Yes, to a large extent.

HOW CAN DECAY BE PREVENTED?

By scrubbing the teeth thoroughly with a toothbrush, tooth powder and water, and by the preservation of the general health.

WHAT CAUSES TEETH TO LOOSEN?

Chiefly the presence of tartar.

HOW CAN THE LOOSENING OF TEETH BE PREVENTED?

By preventing the accumulation of tartar or other irritants, which inflame the gum around the tooth, by scrubbing with brush and powder the same as for the prevention of decay. Tartar which cannot be reached by the brush should be removed by the dentist.

HOW OFTEN SHOULD THE TEETH BE CLEANED?

At least twice a day—in the morning and at bedtime; better after each meal. The after-meal cleansing should not involve a too vigorous use of the brush.

WHAT KIND OF A TOOTH POWDER SHOULD BE USED?

For purposes of simple cleanliness in a fairly healthy mouth, the best tooth powder is made of some alkaline substance, such as precipitated chalk or magnesia, so finely powdered as to be without perceptible

grit, and flavored to taste, as desired, with aromatic oils, such as oil of wintergreen, oil of peppermint, etc. The powder should not contain orris root or other starchy vegetable matter. In cases where the gums or teeth, or both, are much diseased, special powders or lotions are needed; these should be prescribed by the dentist.

HOW OFTEN SHOULD THE TOOTH POWDER BE USED?

At least once a day, preferably at bedtime.

HOW OFTEN SHOULD THE DENTIST BE VISITED?

At least twice a year. When unusual conditions, predisposing to decay and gum trouble, are present, the visits should be made more frequently.

For the care of unhealthy conditions, resulting in a predisposition to decay of the teeth and diseases of the gums, systematic as well as local treatment is often necessary. Usually the treatment found most effective is that which promotes the general health of the patient, and includes nutritious food, sunshine, exercise and sleep.

THE VALUE OF FIRST IMPRESSIONS TO THE DENTIST

FREDERICK CROSBY BRUSH, D.D.S., NEW YORK

HAVE you ever wondered what were the first impressions of a new patient upon meeting you in your office? Are you sure you would like these first impressions to be the lasting ones? Do the surroundings and incidentals that create these first impressions convey just the ideas that you would like impressed upon patients that visit you for the first time?

Just to get out of a rut and get a new view-point, suppose you take a little journey with me to some other offices and view them as if we were patients.

This may help us see ourselves more as others see us. And such vision may be very helpful.

The first office is on the second floor of a business block in a small city. At the street door is a cheap tin sign bearing the dentist's name. The paint is chipped off and some of the letters obliterated by the ravages of the weather. We enter by a long, dark flight of dirty stairs and

find the office at the end of a long hall, lighted by one dim gas jet. The reception-room contains a hodge-podge of very old and a few pieces of very new furniture, all in poor taste; on the walls hang cheap prints, lithographs and amateur photos. No provision is made for a dressing-room or a suitable place for a lady to adjust her hair or hat before leaving the office. Personally, this dentist is a capital fellow; a gentleman in every respect. He mingles with the best people in the town; and he never can understand why the people he meets socially will not come to him professionally.

We, as a profession, are preaching hygiene and prevention, and yet how little attention do we pay the subject in our own surroundings; only a short time ago a patient was complaining that she could not continue with her former dentist because the air in his office was so stale and foul with the odors of medicines, and he kept it so hot that she always had a sick headache after every visit.

RECEPTION-ROOM FURNITURE

It is understood that when you started in practice you could not have just the furnishings and equipment that you desired; but now that your practice has grown, have you done anything to improve those conditions? You wish, of course, to have the patronage of the best people in your community; that is, the people of refinement, culture and financial means. Are your surroundings such as to attract these people? That you have to spend money to get money is just as true in dentistry as in any other business; perhaps a little more so. Is your office situated in a good neighborhood and easy of access for the people you desire to reach? Is the approach to your office as light and clean as it should be?

Reception-room furniture need not be of the most expensive kind in order to be impressive, but it should be attractive, in good taste and in perfect order. There is nothing quite so shabby as an upholstered chair that has a broken spring and frayed-out trimming. What have you on the walls of your reception-room? One good painting, water color or etching, is worth a room full of cheap prints in gaudy frames. It is quite true that your patients come to you for your *work* and not to see your art gallery; nevertheless, they are quite apt to form their opinion of you from the taste you display in your surroundings. Above all things, don't hang on your walls an oil or crayon sketch of yourself, made when you wore hair on your face and thought yourself quite a lady-killer, or one of your wife, wearing an impossible gown and a smirk on her face; it's bad taste and worse art. How about that stuff on

the mantel-shelf? Does it not look like the vintage of about 1871? And what a dirt catcher! You couldn't handle a piece of it without soiling a pair of dirty gloves.

Don't wait for the scrubwoman to break it; throw it out *now* and get one or two pieces of plain, artistic bric-à-brac (or nothing), and then see that it is kept clean.

How about your reception-room table; is there anything on it that a patient can pick up and be interested in while waiting for you or the friend that is in your chair? I called on a specialist a short time ago, and on the table was one copy of the *Literary Digest* nearly a year old, and with the cover torn off and some of the leaves missing, and I was expected to wait nearly a half hour. Interesting, wasn't it? I didn't wait; I wanted a man that was more up-to-date in all things. Last week I was in a physician's office where the table was piled high with magazines, a large variety, but the complete numbers for over a year back. One condition was about as bad as the other. A few of the latest issues of high-class magazines would be far more acceptable. When selecting them, remember that your patients are apt to judge your literary tastes by what they find on your table. Don't forget the children; a few pretty books, like the Beatrice Potter books, for instance, will go a long way toward relieving the child's fears on a visit to your office.

Have you a dressing-room with its necessary conveniences for the ladies? Without doubt the largest part of your practice is with women, and they certainly do not like to leave your office without arranging their hair and hats, etc., nor do they like to do this in a public reception-room before other women or possibly men. A separate room or a well-arranged screen or curtain should be provided for this purpose.

THE VALUE OF PERSONAL APPEARANCE

How about your own personal appearance in your office? I was in an office a few days ago where there were two operators, and both busy at the time. One had on a smoking-jacket. Nothing short of a bath-robe could be more inappropriate for a surgeon to wear while operating. The other had on his street coat. Do you want to rub the dust and dirt from your clothes into your patients' heads or have the grease and stains from their hair upon the sleeve of your coat when you appear in public? Take your choice; either condition is bad enough. The most sensible thing to wear and what has been adopted by high-class men generally, is the white duck coat with a standing military collar and without any pockets or buttons to catch in a patient's garments or about

the chair while operating; and, above all things, change often enough to have it always *clean;* every penny saved on laundry is a dollar lost in self-esteem and appreciation by the patients.

While we are on this subject of personal appearance, let us consider a few things. Have you ever realized that a clean, smooth face or *closely* cropped beard is a financial asset? At a dental meeting some time ago a group was discussing *success* in dental practice, when they were joined by a young man who announced that he was trying to be the best dentist in his community, get the highest fees, and have the best people for patients, and yet he could not succeed; in fact, the very people that he wanted to retain were the ones that were leaving him and going elsewhere, and asked for an explanation of it. The answer was to turn him about to a mirror and direct him to examine himself critically. He had not shaved that day and his beard showed plainly. His collar was soiled and looked as though it had been worn several days. His necktie was threadbare. While his clothes were of good material, they were poorly kept, not properly brushed or pressed, and showed many spots. His hands were a sight to behold; the grime of the laboratory ground into them, the finger-tips scarred and frayed from knife-cuts and coarse work, the nails rough and dirty. He was asked if he thought any refined human being, especially a sensitive woman, would care to have such looking hands near her face, to say nothing of coming in contact with her mouth. He was inclined to resent these criticisms at first, but he afterward realized that they were well-intended. He profited by the experience, and has prospered accordingly.

The question is often discussed whether it is good taste or advisable to make a display of diplomas in an office. There are many view-points that may be taken on this question. One is that your diplomas are your credentials showing that you have had the requisite preliminary education, and have earned the right to be in practice, and, therefore, have a right to the confidence and esteem of your patients. Strangers placing themselves in your hands are entitled to know your credentials, and if they are where they can be seen it helps to inspire confidence in you. But the place for them is not in the reception-room, but in the operating-room or over your desk. As they represent your *right* to practise, just as your instrument equipment represents your *ability* to practise, they should be together.

Above all things, keep a maid in your office. No man whose time is worth two dollars an hour should be spending it doing things that a maid could do for five dollars a week. And this is an impression that patients have first, last and all the time.

MY DAY AS SECRETARY

By A Dental Secretary

This is the second article by the same secretary who contributed to the February Dental Digest. If it be thought that such an organization is too far advanced for many offices, the thinker may be assured that this office began in an humble way years ago. Any dentist who will develop his business ability along with his professional skill may approach closely to an equally efficient organization. True, the bases of this office are the unusual skill and faithfulness of the dentist; but the organization is not the result of *dental* skill. It results mostly from the fact that he has developed his *business* abilities far more than most dentists. His office is a joy to all beholders. The fees his patients willingly pay make some dentists gasp. This is the happy result of combining business ability and professional skill. Don't forget that great factor, business ability.

And this secretary is such a jewel among secretaries because she, too, has highly developed business ability.—Editor.

The day begins at an hour that the conscience may dictate. There is an appointed time, but can one always wait to or linger after that minute, if a busy day is the prospect? Five minutes late often means that the cue for the entire day is lost, or, if lateness occurs on Monday, it will probably make the work of the whole week go behind. For work, the early hours of the morning are golden, and 8.30 seems a reasonable time for a secretary to be at her post of duty.

The opening of the safe (in my office), which contains the books and various records and a general survey of the two floors which constitute our suite, and which the maids have cleaned in readiness for the reception of patients, begins the work of the day.

The work at the desk begins with the opening and reading of the mail. All the letters are then answered without the assistance of the doctors, with the exception of the professional ones, about which they must be consulted.

This work is not uninterrupted. The ceaseless ring of the telephone bell, which must receive my attention, is probably the greatest interrupter of the day. The maid answers the phone and brings to me the name of the party on the wire and the message or request that may be given. The appointment question is in the lead. Appointments made or changed and the various stories that go with each ringing of the telephone bell means a great consumption of time.

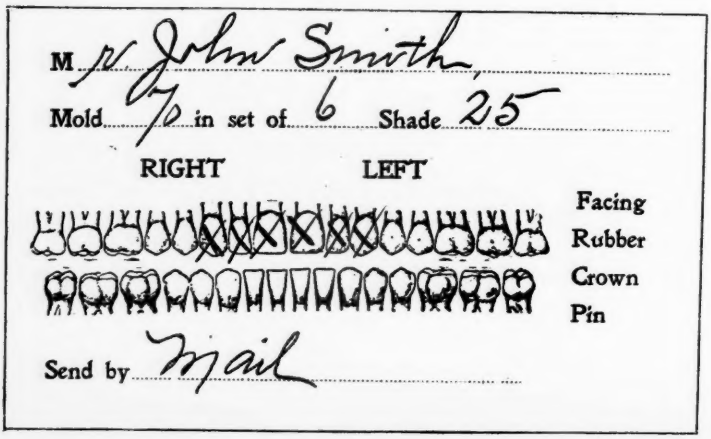
In a busy office the ring of the door bell can only be compared to the sands of the sea and the waves of the ocean. It is my duty, as the maid tells the name of each patient who has a regular appointment, to inform

the doctors by means of the telautograph. Some come without appointments, and many on errands that are anything but professional. These people must all be interviewed and dismissed without consulting the doctors.

The book-keeping should be accomplished with as few interruptions as possible, as a record goes to each patient with his or her bill, besides a duplicate one which is kept by us. It is very necessary that both be correct or the result would undoubtedly be serious trouble.

After the general routine of the day is over, and before the hour of closing, bills must be carefully inspected, checked and paid. To accomplish this a secretary must have the power of attorney, in order to sign checks and attend to these matters in a satisfactory way. She, too, must have permission from her employer to act on her own judgment, otherwise the time saved in the mere signing of a check would be entirely lost in the discussion of some trifling account.

The ordering of teeth is also an important branch of my work. The method employed is very simple and, I think, nearly perfect. In a safe especially designed for the purpose, together with the precious metals, is a full line of duplicate moulds, facings, crowns and rubber teeth, made by one company. With this stock always on hand it is an easy matter for the doctors to make their selection for each case without leaving the office. An envelope is then filled out, and either sent to the depot by mail or else the teeth are telephoned for. This method is one of the greatest time savers we employ, and one which we hope will remain available to us for a long time to come.



Facsimile of envelope we use for ordering teeth, crown, and facings.

Time must be found for an occasional shopping trip, in order to keep up our stock of needed articles that cannot be ordered over the phone. Linen principally must be carefully selected and bought in large quantities to insure an abundant supply for use and a reserve such as is customary for us to keep.

Stationery, too, requires no small amount of time, thought and money. These two articles speak for themselves, and the money spent in them is just one of the many indirect ways of making money.

As the spring approaches and the time draws near for the installing of the summer furniture, it seems wise that a little forethought be taken, and a suitable piece of furniture be in readiness to take the place of one that is worn out. New summer rugs must be bought each year, and if one can have first choice of a season's goods, it is so much the better.

At five o'clock, the closing hour of each day, the doctors mark the telautograph slips and send them to me that the charts may be out and ready for the succeeding day.

CASH OR CREDIT?

THERE are many dentists who are afraid to ask for the money due them. On the other hand, many dentists get their money either as "spot cash" or within thirty days. Some dentists do not lose $1 per $1,000 of practice.

How nearly is it possible to make a family practice a cash practice? Isn't it better for a dentist to do less business and get his money than to have a large practice and lose a considerable share of his profits through poor collections?

What is the best way of establishing a new practice on a cash business? What is the best way to turn an established credit practice into a cash practice without losing desirable patients?

Is the patient who gets angry at being expected to pay in thirty days desirable?

Do long accounts make bad friends? Do short accounts keep friendship?

Dentists want answers to these questions. Many a dentist is turning these questions over in his mind trying to shape his future conduct. Maybe you can help him. Maybe he can help you. Address EDITOR, DENTAL DIGEST, No. 47 West Forty-second Street, New York, N. Y.

BROTHER BILL'S TRAVELS

Brother Bill is a dentist. He has a fine practice and enough money to travel occasionally. On one of his trips Bill receives a letter from an old classmate who is working hard but not saving any money.

(*Bill answers a letter by relating a chapter from his own experience*)

TOLEDO, OHIO.

FRIEND HARRY: Your letter reached me at Chicago. I have been waiting for leisure to write out some facts that I want to give you. If they do you as much good as a business man once did me on the same subject, I shall be very glad. Your letter says you are working very hard, and are making a good living, but when you figure up at the close of each year, you find that, in spite of careful living, you have been enabled to save but little. The reason you give is that people of your town will not pay good prices for dentistry.

As I visit dentists about the country, I hear a good deal of this sort of complaint. When I was young and green I believed it, too, and I conducted my practice on that basis. I let fear of patients keep my fees down. I shall never forget the occasion that brought me out of it.

I had just finished a very hard year's work, and had been figuring over my books to see what had become of the money. I didn't need to figure up my savings, because there weren't any worth mentioning. And the more I figured the bluer I got.

I remember distinctly, it was a stormy afternoon and the office was free from patients. I stood looking out the window, thinking how much the weather harmonized with my feelings, when I happened to see Albert McQuirk, the best all-round business man in the city, going along the other side of the street. With a sudden inspiration, I put up the window and called to him, since I knew him real well. He came in. As soon as he got settled, I laid my case before him, telling him all the facts. When I got through, I asked: "Now, what's the reason that, with this excellent equipment, a good education and an enormous amount of hard work, I'm not making money?"

BILL GETS A LESSON IN THE THEORY AND PRACTICE OF BUSINESS

He said at once: "Your prices are too low; raise them. What you need is not more equipment or harder work. You need a practical lesson in business sense. Let me give it to you." I answered: "I'm afraid to raise prices. Drs. A, B and C, right near me, work for these fees, and I'm afraid that, if I raise my prices, all my patients will go to them."

He didn't make any answer to this, but took out a pencil and a pad and began to figure, asking me questions in the meantime. "I'll show you," said he, "how I figure what to charge for a thing."

"What did it cost you to go through college to get a dental education?"

"Fourteen hundred dollars," said I. He put that down to head a column.

"It took you three years, didn't it?"

"Yes."

"Well, you probably could have earned $12 a week during that three years, but, in order to make sure, we'll put down the total at $1,500."

"What did your office equipment cost?"

I figured a few minutes, and said: "Well, it's all good quality, and it cost quite a good deal over $1,000."

He put the thousand dollars down under the other two items.

That made a table which looked like this:

College expenses	$1,400
Value of time in college	1,500
Value of office equipment	1,000
Total	$3,900

Then he started another little table, asking questions that he might get the information for the figures. I was surprised at his keenness. He asked my operating expenses, and we figured out as follows:

Rent	$300
Electricity	24
Gas and heat	50
Phone	36
Girl	300
Laundry	60
Supplies	300 or over.

These made a total of $1,070, at which I was dumfounded. I hadn't imagined it was nearly so great. He put this total down, and then added $100 for office depreciation annually. Then he insisted on adding 10 per cent. on the total investment, which amounted to $390.

His next question was, "How much do you think you should earn annually?" I didn't know at first, but, after a little studying, I said, "$2,000." He put this down as the last item in the table. That table then looked as I write it here.

Annual expense	$1,070
Annual depreciation	100
Ten per cent. on investment	390
Should earn	2,000
Total	$3,560

This totalled up $3,560, which the office must produce annually, if I was to get $2,000 out of it.

THEY FIGURE THE RUNNING COST

"How many hours a year ought a dentist to work?"

We studied this over and decided to allow for two weeks' vacation and two weeks for sickness and dental meetings. This left, in round numbers, 2,400 hours a year. McQuirk then deducted 10 per cent. for lost time, idle hours, broken appointments, etc. This left 2,160 hours, and when we had divided this into the $3,560 which the office must produce annually, we found that the cost of running the office was $1.65 an hour. Mr. McQuirk said: "You'd better base your charges on a minimum of $2 per hour." This looked easy enough, but when I turned over in my mind that it frequently took an hour to put in a good amalgam filling, and sometimes several hours for polishing teeth, treatments, etc., all my old fears came back. I said: "The people will not pay it."

"Who has the best dry-goods store in town?" asked McQuirk.

"Hutchins," said I.

"Do you trade there?"

"Yes."

"Why?"

"Because he carries the best goods."

"Doesn't he charge all they're worth? Hasn't he about all the good patronage in the city?"

THE BIG IDEA HITS BILL

I hadn't had time to answer "Yes" when *The Big Idea* hit me. Hutchins was prosperous, *not only* because he carried the best goods, but also *because he charged the best prices.* And all the best people in town paid.

I was so filled with this perception that, as soon as McQuirk went, I put on my hat and coat, and, in spite of the storm, went to Hutchins' store and walked about for an hour. Although the storm raged outside, there were quite a few people inside, and I met at least a half dozen of my patients. I watched them carefully. Some, whom I feared to charge a proper price, were buying liberally, *and the prices didn't seem to hold them back.*

I watched several of my patients at the counters. The high prices did no keep them from buying.

I couldn't do another stroke of work that day. I had The Big Idea, and I didn't want to see anybody. I went to the office, locked myself in, and there I thrashed the whole matter out. The Big Idea was simply this: Offer the best at a proportionate price, and don't show hesitation or fear about charging it, *because it's worth it.*

The office opened the next morning on a basis of $2 an hour as a minimum, and ran that way all the year. My earnings exceeded our estimate, and, twelve months later, I had $1,500 in the bank. Now the price per hour is several times $2 and the savings are larger, also.

Of course, I lost some patients, but very few, and mostly the ones I was willing to lose. They were more than replaced by new ones, who came partly, I think, because I had the courage to charge higher prices. They felt my service must be worth more, or I wouldn't dare to charge more. I had to do a good many pieces of work at lump prices, but in lumping the price I estimated the time at $2 per hour.

During the first few months I had to do a great deal of talking and educational work, but it all paid, and paid well.

I came here from Chicago on the Lake Shore Limited. You know the Limited is the most expensive train, with the exception of one, on the road. You can have every comfort—meals, bath, shaves, beds, shines, manicures, tailoring and typewriting—each for a consideration. It always interests me to see how many people are willing to pay the consideration for the sake of the conveniences.

As I sat in the dining car, thinking over your letter and dreaming of these old experiences, Mr. Smithers, the grocer, from your city, came in. I've known him slightly for several years, and was very glad to hail him. We had dinner together, and from him I got some facts concerning your town. I want to give them to you. I was interested to note his dinner order, because your letter was in my pocket. He is from your town, and, presumably, is one of the people whom you say cannot afford good prices for dental work. He spent $1.50 for dinner, and gave the porter a quarter. I inquired after some people I know in your city, and purposely spoke as if the place were not very prosperous, and one couldn't hope for much there. Mr. Smithers took this up at once. He said, and seemed to prove, that most of the people who deserved to prosper were prosperous. Said the people lived better each year both as to the furnishings of their houses and what they had on their tables.

He claimed his business proved this. About a year before the panic he put in a high-priced line of canned goods. He did it hesitatingly, because the price per can was so high; he didn't believe people would pay 35 cents a can for peaches, when the next can on the shelf (peaches also and formerly considered good) sold regularly for 20 cents. But his sales of the higher-priced goods are almost double that of the cheaper peaches. People appreciate the quality, *and the price doesn't keep them from buying.* He says many people buy them regularly whom one might not think would. Many other lines in his busi-

ness show the same results, and he has almost remodelled his stock on that basis.

Some years ago his son acquired an interest in the furniture store next door. At first they didn't have the nerve to carry fine furniture at good prices. But after a while they put in a few good pieces and showed the public the difference. Then trade has doubled, and is now largely in fine goods, quartered oak, mahogany, etc.

Smithers is one of the people you say can't afford good prices for dental work. He spent $1.50 for his dinner and gave the porter a quarter.

I might write you much more that he told me, but this is enough. It shows me very plainly that you're just where I was that stormy afternoon. While other folks have gone ahead, you've stood still till you've acquired the "stand still viewpoint." Your patients are prosperous; they have money for what they want; they have money for the best dentistry you can do at fees that will one day give you a competence.

You need a post-graduate course—but not in the theory and practice of dentistry. You need it in the practice of business under somebody who knows how to make money. Your work is too one-sided; professional interests have crowded out business sense. Shut your office and go to the stores. Watch your patients buy the best merchandise at top prices. Get The Big Idea—that your services are worth as much as any merchandise. If you were a good business man—if you knew how to sell your knowledge and skill—you would find your fellow-townsmen asking for the best you could give—and paying proportionately.

Wake up, Harry. You've lost time enough. Make the remaining years count financially. Give your people good dentistry at good prices. Quit selling 35 cent peaches for 20 cents.

Yours,
BILL.

THIS DENTIST LIKES "BROTHER BILL."

RIVERPOINT, R. I., *March* 12, 1909.

Editor DENTAL DIGEST, New York, N. Y.

DEAR DR.: Your "Brother Bill Travels" in the January number might well be applied to dental magazines in general, the only difference being that at dental meetings we are compelled to sit up and listen, but it is not necessary to read uninteresting preambles.

The DENTAL DIGEST is indeed a "busy dentist" magazine, the articles being instructive, interesting and right to the point.

After reading the January and February numbers I can not refrain from writing to congratulate you. It is just the sort of a magazine that I have been hunting for, for a long time.

Very truly yours,
(Signed) FRANK P. DUFFY, D. D. S.

SEEN THROUGH A PATIENT'S EYES

THIS conversation was recently overheard between two ladies, one of whom was evidently a patron of a certain dentist, whose name she gave. "If I did not have such confidence in Dr. B., I could never go to him again for any dental work. You know his office is near our house. The other day I saw an awfully dirty looking man going up to his office to have a tooth extracted. It doesn't bother me any, because I know he takes pains to sterilize his instruments every time he uses them, but if I didn't know that for a fact, I could never go to him again."

DIGESTS

THE IMPORTANCE OF DENTISTRY IN PREVENTIVE HYGIENE

By Mr. Horace Fletcher, New York, N. Y., and Venice, Italy

(*Lecture before the union meeting of the Seventh and Eighth District Dental Societies of the State of New York, held at Rochester, November* 14, 1908.)

This digest is both interesting and valuable to dentists. Maybe some parts of it are prophetic of what will be our views and practice as dentists in years that are coming.

Mr. Fletcher is regarded as an authority on the science of eating and certainly he is a wonderful example that his system does no harm. Many false views of his teachings are abroad and this sensible exposition of them will be appreciated. Certainly the adoption of his method of mastication would prove very valuable to dentists who are subjected to continuous toil and high nervous tension.—Editor.

. . . Starting at once from the text, and again asking the question, "Is Dentistry a Profession?" I want to give you my most optimistic idea of what dentistry is best fitted to be, and what I think it will be considered within the next ten years. In all the prophecies I have made within the past twenty years (and I am quite a prophet), when I have said "ten years," my predictions have come true in five years. I believe that dentistry within the next ten years will be looked upon as the special department of the hygienic professions whose office will be the conservation of the front gateway of the alimentary canal in more ways than the mere care of the teeth. I believe that medicine, in relation to dietetics, will have become a curiosity of history, and that the human equipment for nourishment will be put under two special departments, the mental and the dental, both under the care of the D.M.D.

The relation of the mental to the dental is this: You may create all the favorable suggestion you like, but, unless you have a good set of teeth with which to masticate your food properly, in order to allow the juices of the mouth to get at it, or unless the teeth are in condition to

munch your food comfortably and enjoyably, you are sure to have poor digestion. This has been shown conclusively by Pavloff and Cannon in experiments with which you are all probably familiar.

I am not going to give you a long dissertation on the method which I advise in taking food, because it has already been published so widely that you cannot have escaped learning about it. All of our study of the question leads in the direction, not of extending, but of simplifying, our personal responsibility in the matter of our own nutrition. In considering a way by which simplification can be aided, Dr. Van Someran, of Venice, has suggested that we can profitably divide digestion into two departments, the *voluntary* and the *involuntary*. Voluntary digestion is that which takes place while the food is yet under control and before it is swallowed. The results of our experiments for the past ten or twelve years have shown that when food is properly treated within the small section of the alimentary canal under our voluntary control, we have no evidence, apparent to the senses, that there is any more alimentary canal beyond the throat. We forget that we have a stomach, forget that we have intestines, and the whole process of involuntary digestion is done so completely and easily that we have no thought or care in the matter at all. What we want to do is to concentrate our attention on the things which are our own particular responsibility and let nature do her self-assigned part of the work uninterrupted, uninterfered with, and unquestioned.

Consider the complexity of that small three inches of the alimentary canal and how much of importance happens in and around the mouth! There is where nearly all the sensations are expressed. Nature does everything she can do to concentrate your attention there, where is enjoyed all the pleasure of eating and where she first protests if the act of eating has been careless. If there be trouble in the field of involuntary digestion, in the stomach or other intestines, it is in the mouth that the acids and ferments of indigestion are first observed. In the mouth we sense all the pleasure of eating; there is where is concentrated our consideration of true appetite, "watering of the mouth," and there is where nature has done everything to attract our attention; but man, with the perversity of a perverse child, has disregarded this evident advice, these beneficent precautions and allurements. We have ignored these attempts to concentrate attention upon this portion of the canal, and we have been groping for remedies to counteract the results of our carelessness in the dark recesses of the involuntary field. The medical profession has been directing our attention elsewhere, so that we have been roaming about in uncertainty and confusion over the thirty or more feet of the alimentary canal, where we do nothing but mischief, and have

utterly neglected the three inches which are our field of personal responsibility.

When I took up the study of this subject ten or twelve years ago—that is, concentrating my own independent thought on it—I went first to the books for information. I found, even at that time, scores of treatises upon dietetics, every one of which was written, not to proclaim an undoubted truth, but to deny some other theory, and no two were in concurrence. Then I turned away from the field of dietetic speculation and opened anew my physiological text-book to review my study of the subject of years ago, and I found only a few pages devoted to the three inches of the alimentary canal which is our personal responsibility, but nearly three thousand pages devoted to what is supposed to happen after food is swallowed, beyond the field of our responsibility.

I concentrated my attention upon that one little section of the alimentary canal, the mouth, and I am now going to tell you what I think happens there. If you will follow me you will agree with me, I believe. I can best represent the mouth and tongue by the use of my hands. The hand, with the fingers, is a very good representation of the thin and thick portions of the tongue; this part (illustrating with the fingers) representing the flexible portion. The palm of the other hand may represent the roof of the mouth, the hard palate, and the fingers of this other hand may also serve to represent the soft palate hanging down like a curtain behind the tongue when the mouth is closed. It has been found that during the process of mastication the buccal pouch (the mouth) is an hermetically sealed cavity. This can be easily tested by filling the mouth with air and breathing while the cheeks remain inflated. If the closed mouth were not entirely shut off from the air-passage behind it, the air would be drawn out of the mouth. This may not be relevant to our subject, but it shows that there is an air-tight gate at the back of the mouth and that during the entire process of mastication the mouth is an air-tight cavity. Food is taken into the mouth and the process of mastication and insalivation begins. The tongue moves about and pushes the food between the teeth and up against the roof of the mouth. Mixture of saliva with food causes a chemical transformation which gives us taste. As insalivation progresses, the food becomes alkaline, or neutral, or whatever is necessary to make it acceptable to the body. There is a furrow in the center of the tongue, and when the food becomes liquefied it crawls up the furrow until it comes to the gate of the throat in the region of the circumvallate papillæ. If it is in a condition acceptable to the discriminating sense, which I believe is associated intimately with the circumvallate

papillæ, the closure is relaxed, the soft palate hanging down behind the thick part of the tongue acts like the sucker of a pump, and draws the chemically transformed food material back for swallowing.

Suppose you take your meal (a piece of dry bread, for instance) with your head down; when you begin the process of mastication you can feel the saliva mixing with the bread until finally it becomes very creamy and sweet. When it attains that state, you will note that it begins to crawl up the concavity of the tongue, "runs up-hill," as it were, against gravitation, and when it arrives at the vicinity of the circumvallate papillæ there is a slight sensation of contact, an inclination to open up the gate. This is the important discriminating apparatus and function which I claim to have discovered, and which I have named "Nature's food filter." Unless forcibly prevented by the will, the gate then opens, and the food is drawn back by the negative pressure behind it (suction), and the reflex of deglutition is set up and completed. At this moment the larynx is brought forward under the base of the tongue for the protection of the air-passages, the pharynx is brought into convenient place, and peristalsis follows.

An interesting part of what I have described and the part to which I would call your attention for consideration as professional men is, What is the relation of the circumvallate papillæ to the opening and the closing of the food-gate? My own inference in the matter is that, while there is any taste left in a morsel of food in the mouth the closure remains, but with the disappearance of taste there is a report sent to the brain by the nerves surrounding the circumvallate papillæ that the chemical transformation is completed; the message is sent to the brain through the nerves connected with the muscles, and a message is sent back for the gate to open, and the process of deglutition is begun. This is the process called "involuntary swallowing."

Now, I want to tell you that ten or twelve years of careful attention to observation of this discriminating process and to the avoidance of swallowing anything that does not *swallow itself*, using the filtering apparatus as nature intended, has resulted in the disappearance of all disabilities of digestion. If anyone will for a week or ten days carefully use the filter-function in the way I have recommended, eating only food which appeals to the appetite, faithfully masticating or sipping it; swallowing nothing except by the involuntary process; ceasing to eat when no longer actually hungry; discarding anything that is not swallowed involuntarily, the filter-function will be sensitized so perfectly that it can be trusted to work automatically. But at this point do not think that your responsibility has ceased. Whereas chewing and care are important, the one thing of greatest importance is the mental

attitude toward the food you are eating and your mental state during the time the food is being digested.

Those of you who have followed Dr. Cannon's experiments during the past ten years have learned from his report of them that the mental state may either accelerate the process of digestion in the alimentary canal, retard it, or even stop it entirely. To illustrate this I will give you a brief description of some of Dr. Cannon's experiments, which will no doubt be interesting in this connection. He uses cats as test subjects. He could not study the process in man because the head of man is altogether too opaque ("thick-headed") to get the X-ray light through it; and, besides, the use of the X-ray is very dangerous. The alimentary canal of the cat is luminous to the X-ray throughout. The food is mixed with subnitrate of bismuth to render it opaque to the X-ray. Professor Cannon allows his cats to become very hungry, with the appetite unusually strong. Then he selects the food his cats seem to like. Before giving it to a cat the food is covered with subnitrate of bismuth, and consequently when it passes into the stomach through the gullet the shadow from the X-ray tells what is happening on the way. I have watched the process, and it has been pictured by the photographic method. The cat, in not having much on its mind except the desire for something to eat, is fulfilling all the demands of nature that are required. There is first of all a strong appetite, and when the cat takes food, he is pleased with the enjoyment of it, and is thus fulfilling the psychic requirements of his nature. As he swallowed the food we watched the shadow as it went down the esophagus, hastened by peristalsis, and all this time the cat was lying on the fluorescent screen, contented and happy, as if before a log-wood fire. He was in a fine frame of mind and began to purr. During the purring the food was on its way into and through the stomach. Finally, as the food came to the pyloric orifice (the back-gate of the stomach) it began to hesitate a moment, then all at once we saw a small portion go through the opening, while the rest continued moving about and around the orifice. Then more of the food went through, and the process continued until all had left the stomach.

When it came to the duodenum we commenced to see the process of assimilation pictured by the shadow. The papillæ conniventæ are seen to reach down and pick up the digested particles of food, and this goes on at something like the rate of five hundred dips a minute while the cat is still purring and happy. Then, for the purpose of experiment and not through mischief, the cat's attention is distracted, and at once the movement slows up. The cat is further irritated, and immediately the whole process ceases; everything becomes rigid. It is paralysis of

digestion due to mental influence. If we restore the amiability of the cat—if it is made happy and the purring begins again—mind you, the process of digestion does not immediately resume; it takes considerable time before ordinary digestion commences again. Moreover, when the digestive process is resumed, it is less active than that which takes place before the irritation is imposed. What is the result of this? The moment the digestive juices cease to flow, the bacteria of putridity in the alimentary canal are given a chance to do their deadly work. They begin at once, and that means trouble. They turn the inert food material, not into nutriment, but into poisons; the poisonous material is taken up by the blood and the lymph streams.

Now I will tell you how this illustration, taken from Dr. Cannon's researches, relates to ourselves. The same laws of nature which govern the digestive process in the cat affect us. If we take food in a hasty manner, without due appreciation of appetite and enjoyment, with our thoughts on business or on the catching of a train, and more particularly if we are irritated to the extent of having a "scrap" at the breakfast table, indulging in discussions about meals, business, politics, or anything whatever, we may be sure that during the time we are so doing we are manufacturing poison which is being sent through the body. I think I may illustrate the importance of the psychological influence on digestion by an experiment of Professor Pavloff. Professor Pavloff received the Nobel prize of $40,000 last year for this discovery. He was able, through his skill as a surgeon, to sever the gullet of his dog test-subject so that the mouth was separated from the rest of the alimentary canal, and to the end of the severed gullet a rubber tube was attached. The dog was allowed to get very hungry. He was then given food, and ate it as a dog will do, but instead of the food going into the stomach, it went through the rubber tube and back into the dish. In this way the dog kept on eating without satisfying in any measure his appetite. The moment he sensed enjoyment of the food being eaten a copious flow of the juices in the stomach was started, in anticipation of the food arriving in the stomach. This anticipatory flow went on the whole time the dog was eating and enjoying the taste of his food.

I have told you something of what happens in the mouth. If you get full enjoyment of your food through tasting it thoroughly, digestion will be perfect; and what is the result? This is very important. If you take your food in the manner I recommend—if you swallow only by involuntary swallowing (and it is only by these means that you can get keen enjoyment of your food); if you then stop when appetite slackens—you will find that you no longer are being reminded, through discomfort, that you have anything in the form of a stomach, and all the

abnormal cravings which are mistaken for hunger will disappear entirely. These uncomfortable stomach sensations are merely pathological conditions in connection with indigestion, and are really in themselves forms of indigestion. Real hunger has nothing to do with "faintness" or "all-goneness." If you take food in the manner intended by nature, and as I recommend, you will find that appetite is a perfect guide; it is the true language of the body. You may not know what proteid or starch is, or what food contains mineral salts, but appetite will lead you to the proper selection from almost any available supply. The language of nature is not the language of calories, nor is it expressed in terms of proteids. If you take fifteen years to study the subject, as I have done, you will get farther and farther away from empirical knowledge and read the natural requirements in the instincts. Information can come only from nature. We have to get rid of false ideas before we can consider anything normally and with unquestioned respect. No doctor can tell us what best to do unless he tell us to read the instincts rightly and obey them faithfully. I went through the whole so-called science of the subject, and I assure you that nobody can tell any other body what to do.

I have given you but an inadequate idea of the normal process of nutrition, but it reduces itself to this simple knowledge and formula: Never eat until you are hungry; never eat when in a disturbed state of mind; never allow worry, anger or fear to possess you during the time you are serving on the holy altar of your nutrition—the source of your efficiency. It is clearly a sacred process; it means physical and moral cleanliness; it is the most sacred of duties. When you have done all that you can do to safeguard your nutrition, you may assure yourself that you will be always in the "pink of condition," whether you are an athlete in faithful training or not. You will find your energy enhanced, and your muscle endurance will increase from fifty to two hundred per cent., according to the room for improvement. You will cease to have disagreeable symptoms of headache or lack of energy. Fatigue will have practically become a thing of the past. Sleepiness will be the only symptom of fatigue. You will find that your muscles have improved, through having been given pure nourishment, to the extent, maybe, of two hundred per cent., in their ability to lift weights; not by exercise, but simply by the improvement of the quality of the muscle. You are likely to find that you may be able to lift easily and without resultant soreness twice the amount you have been able to lift while full of poisons. This is capable of easy demonstration, as has been shown by Mr. Stapleton, formerly of Yale University gymnasium, but now physical director of St. Luke's School, Wayne, Pennsylvania.

At the time he was enlisted for the experiments under Professor Chittenden at Yale, five years ago, he went into them half-heartedly, because he felt himself to be already in superior physical condition. But he soon found that his energy, strength and endurance was greatly increased. This improvement, which amounted to a full 100 per cent. or more, came, not as the result of more training, but as the result of the improvement of the quality of the muscles effected by keeping poisons out of the body.

Mr. Granger, of the Battle Creek Sanitarium, as the result of only thirty days of following a right method of eating—and he was in good condition before he started it—was able to perform deep-knee bending (dropping the body down to the heels and lifting it to full height) five thousand and two times consecutively, which required two hours and nineteen minutes of unceasing dropping and lifting. He had never been able to go beyond three thousand dips previously, and on former occasions he had stopped because he could not go on. After thirty days of taking food in the manner recommended he was able to go five thousand and two times, and then he stopped because everybody detailed to watch him grew tired—as he expressed it, "I felt sorry for those people who were watching me." Then he ran downstairs and plunged into a swimming tank and felt no soreness whatever afterward.

I myself, as a matter of demonstration, am frequently asked to "make good." Arriving in this country some time ago, after having spent fifteen months in India and in the tropics around the equator, and after experiencing all sorts of adventures, without any systematic training at all, I was called upon to try a new endurance machine at the Yale gymnasium, the invention of Professor Irving Fisher. I went through the test, not realizing that I had accomplished anything remarkable, but I found that I had broken all previous records for this test. It was a fair test on my part, because I was not expecting to break records, and I assure you that I felt no inconvenience after coming off the platform. I felt a little lighter than usual, and the next day expected to feel soreness, but did not. I simply give this as an example of a test for muscular endurance. It has been demonstrated in many instances that this increased muscular capacity is purely the result of dietic regulation, and it is within the power of everyone to make these experiments for themselves.—*Dental Cosmos.*

The Laundry Bills.—Don't get frightened if your laundry bill is high. The scrub-woman's bill may also be high, but remember everything connected with dentistry should be so very clean that you could not better it.—*Odontoblast.*

THE CARE OF THE MOUTH DURING INFANCY AND CHILDHOOD

By William J. Lederer, D.D.S.

Articles like this should be read by every dentist. They may not be so dramatic as many others, and sometimes we may think them dry and prosaic; but they touch very closely on the maintenance of life in little ones, who may be as dear to someone as our children are to us. One of the editors of this magazine knows this from never-to-be-forgotten experience. Don't let anyone convince you that the use of a lance at the proper time is not a great boon. When you have lanced the gum over a tooth that is trying to burst through the gum and have seen the fever drop to almost normal in a few minutes, diarrhea stop inside of an hour, and both the exhausted baby and the worn-out parents sink to rest, you will pay no further heed to the talk of those who say don't use the lance. And if such an experience comes in your own home, the endless hours of nerve-strain thus relieved will drive this lesson deeply into your mind—use the lance at the proper time. But don't use it till the proper time, or you will do more harm than good.—Editor.

. . . I shall not bore you with etiological, pathological and therapeutic facts, which you are all acquainted with, but rather view the subject from a prophylactic point of view and try to point out the importance of certain hygienic measures and attempt to show the value of conservative treatment which, so far as the mouth is concerned, has not been accorded that station in medical science of which it is deserving.

Altogether, the hygiene of the mouth has been a sadly neglected factor, and it is only of very recent date that the importance of a clean, healthy mouth has begun to be realized. Thus since about a year the medical school inspectors not only examine the children's eyes, ears, throats and noses; they also look at their teeth and report their findings to the health authorities, who notify the children's parents and demand a visit not only to the physician, but also to the dentist.

Such action has borne good fruit already, as the reports showing the results of the treatment of tuberculous glands in children give better statistics than before dental inspection was practised.

Stomatologically, infancy and childhood can be divided into various periods, according to tooth eruption; thus we get: (1) The period beginning at birth and terminating with the eruption of the first temporary teeth about the sixth month. (2) The period of eruption of the temporary teeth, which begins about the sixth month and ends at about the completion of the second year. (3) The interval between primary and

secondary dentition; namely, from about the second to sixth year. (4) The period of eruption of the permanent, and exfoliation of the primary teeth, not including, however, the eruption of the third molars, or wisdom teeth, as these come through during adolescence, and sometimes not until later; that would end the last period about the thirteenth year, when the permanent eye teeth have made their appearance.

From the dental point of view these different periods are: (1) A toothless period, (2) a period of dentition, (3) a period of rest, (4) a second period of dentition.

However, the whole epoch, from birth until the thirteenth year, and, as a matter of fact, before and after that, the period is one of tooth formation and development, for the developmental history of teeth begins about the seventh week of embryonal life and does not terminate until the completion of about the twenty-first year.

The proper care of the mouth during these periods will not only insure a healthy buccal cavity and comfort to the little folks, but will remove the etiological factors of many pathological conditions of infancy and childhood, some of which may reflect lifelong upon the individual.

What are the lesions which occur in the buccal cavity, and what measures constitute that which collectively can be termed the care of the mouth? To review individually all pathological conditions liable to involve and emanate from the portal of the alimentary tract would take us too far, but all can be classed as traceable (1) to traumatism and infection, (2) to diseased constitutional states or faulty nutrition, and (3) to abnormal development. . . .

Little is to be said about the care of the mouth of the infant during the first six months. Different men have expressed different views on the usefulness of cleansing the infantile mouth. The mouth, like the rest of the alimentary tract at birth, or rather up to birth, is presumably sterile, but with the drawing of the first breath and the emission of the first cry, there are introduced into the mouth many species of micro-organisms. . . .

The different authorities, expressing varying views, have all valid reasons for their individual practice, but, summing up all, I am inclined to urge mouth sterilization, especially in children who are fed artificially. There is practically no danger of mouth infection in healthy, breast-fed infants, brought up in hygienic surroundings, if the mother washes the breast nipples before and after nursing. The artificially fed baby, however, is at a disadvantage, as its very food is but a substitute for mother's milk, and bottles, nipples and pacifiers, unless scrupulously clean, may constitute a formidable danger.

The word *careful*, as applied to the washing of the infantile mouth, should be emphasized. It is better to leave the mouth alone than to introduce roughly a finger, which is never aseptic, and may wound the buccal mucous membrane. In fact, a finger should never be introduced into the child's mouth, but a swab, made of cotton, on an applicator or a piece of wood. This used gently will not hurt the mouth. . . .

The mouth will not suffer unless traumatized, but the gastrointestinal tract may. Therefore, I believe careful buccal lavage, in all artificially fed children, at least, is a necessity, and, if done carefully, will be of no harm. I advocate an alkaline antiseptic tablet, dissolved in water or saline solution as a wash for infants.

The use or non-use of pacifiers has been the subject of considerable discussion. Some men claim that the so-called "fruitless sucking" is harmful to the child, others oppose this view. The fact remains that pacifiers are kept even less clean than nipples. I have seen a baby's pacifier on a dusty mantelpiece, in the bed wet with urine, on the floor, in brother's trousers pocket and in other places which were far from clean; for this reason a pacifier becomes a danger. There are, however, other reasons which cause me to look with disfavor upon these "pipes of peace." I contend that the pacifier may become the first source of mouth breathing and lay the foundation of the thumb-sucking habit.

A very pernicious custom of great danger to a child is the habit of the nurse moistening the nipple or pacifier with her own lips before giving it to the child. Sometimes a stranger is asked to mind the child for a short time, and indulging in this common practice may cause luetic or other infection of the infant's mouth if there be abrasions in the child's mouth or about its lips. Too much stress cannot be laid upon this point.

If an infant has a cleft palate or a hare lip, or both, the care of the mouth becomes an even more important factor. Fortunately, however, these malformations are rare and, in many cases, do not interfere with the taking of nourishment of the child. Brophy, of Chicago, advocates a very early operation—that is, when the infant is a few weeks old. Brown, of Milwaukee, and others wait until the child is three years or older. A hare lip is better operated upon early, as the scars and deformed lip resulting will be less visible. A staphylorrhaphy, however, is indicated in very young infants only when the cleft interferes with nutrition and there is the danger of starvation, otherwise I would deem it more advisable to postpone the operation until a little later.

Primary dentition brings us to a second period.

A great deal has been written about dentition and some of the con-

comitant conditions. Older writers spoke of teething diarrhea, teething convulsions, teething coughs, and, in fact, there are few diseased states which have not at one time or another been brought in relationship with the eruption of the teeth. Some have advised lancing the gums freely to help the teeth come through, others advised the opposite.

Dentition is a physiological process, but, if there are severe symptoms attending, they may be brought on by the eruption of the teeth, as the period of dentition is one of great physiological activity and growth, but this only constitutes the last drop in the bucket which causes the overflow, and the real cause is always some other underlying abnormal or pathological condition, as the symptoms vary in different cases, and we have not even a temperature chart characteristic of dentition.

Hunter boasted of having used the lancet ten to twenty times during the eruption of one tooth. Hurlock, in 1742, incised the gums of children ten days old, and, to carry this nonsense to extremes, lacerated the gum tissue after all the primary teeth had erupted to protect the child against eruptions and other diseases. A great deal could be written about the various absurd methods of treating dentition symptoms; however, time and space forbid it.

To illustrate the care of the mouth during dentition, I should like to frame a set of "Don'ts."

Don't rub the teeth through, as this will only open an avenue of possible infection, particularly as the resistance of the little body is somewhat lowered during this state.

Don't rub the gums (as a rule), for the above-mentioned reason, and especially if the erupting tooth is well covered; the incised wound will heal up very rapidly, and the operative procedure has to be repeated.

Don't poke dirty fingers into the child's mouth to find out if the tooth is through, but keep the mouth clean. Most of the attending symptoms of difficult dentition can be avoided by carefully looking after the digestive apparatus.

After the first teeth have made their appearance, many begin to modify the infant's diet, giving the child other food than milk. A soft toothbrush should now be used, but particular care must be exercised to use a brush which does not lose its bristles. The mouth should be washed after every feeding and before retiring. A mild antiseptic, like liquor antisepticus diluted, to which a little bicarbonate of sodium is added to make it alkaline, can be used, or an alkaline antiseptic tablet, dissolved in water. If a child is under medical care and takes medicine of any kind, the mouth should be washed, so as to neutralize any acid drug given and to cultivate the habit for the future. Regular dental inspec-

tion should be instituted from the time that all temporary teeth are fully erupted. . . .

The belief that the first or milk teeth can be extracted at random, inasmuch as they are replaced by the permanent teeth, is erroneous, as dental irregularities are thus produced which may alter the shape of the dental arches so as not only to be unsightly, but to induce abnormal breathing. It is almost more important to retain the temporary teeth until certain periods, than it is to retain the permanent denture intact, as the latter can be replaced by artificial organs. The functions of the temporary teeth are not only to assist in buccal digestion, but also to assist in the development and shaping of the jaws or dental arches proper. . . .

Just as it is wrong to extract the temporary teeth too early, it will be an error to retain them beyond a certain period. Sometimes temporary teeth are retained longer than their normal period, brought about by the failure of root absorption, which is produced by a dead pulp or other conditions. In such cases the permanent tooth is deflected in its course, and will erupt either inside or outside of the arch.

. . . It is often the cause of incorrect breathing (mouth-breathing), with its sequelæ.

. . . No intelligent physician will tolerate a focus of infection anywhere. Tuberculous glands are excised most promptly. The mouth, however, which is a perfect breeding ground for microörganisms, offering heat and moisture and endless nutrient material for the development of a bacterial flora, extraordinary in number and variety; the mouth, which is the most abused part of our anatomy, being constantly irritated, stabbed, cut, torn and otherwise injured, is absolutely, or almost, ignored. Purulent conditions are permitted to exist here without care for years, and microörganisms are allowed to gain entrance to the system by inhalation, swallowing and through abrasions of the mouth and through necrosed tooth pulps.

During my service at the German Hospital Dispensary, I saw during one month 22 children with enlarged glands; all of these had badly decayed teeth.

Looking up the literature, I find that Odenthal, of Bonn, has investigated the relationship between chronic enlargement of the cervical glands and dental caries. He examined 987 children; 429 had carious teeth, and of these 424, or 99 per cent., had glandular swelling. Hoppe, of Leipzig, examined 269 cases, and found in 73.9 per cent. glandular swellings, in nearly all instances associated with carious teeth. Sexton, who examined the teeth and ears of the inmates of a large charitable institution, they being almost exclusively within the age of second den-

tition, found that over 6 per cent. were suffering from otitis media purulenta. In 30 children there were frequent attacks of earache; in some cases there were earache and toothache simultaneously. In many cases, he writes, where inflammation cannot be directly traced to dental irritation as its cause, it is certainly aggravated by the latter, and a cure is seemingly impossible until the dental irritation is removed. . . .

Mouth-breathing, as is well known, is a very potent and common contributory cause of phthisis, and in many cases this pernicious habit is formed as the result of carious teeth in early life. An exposed nerve or tender gum, or a dental periostitis, renders mastication painful, and the child is afraid to close its jaws, and not only acquires the habit of bolting its food, but also, to avoid painful contact of the teeth, keeps them open sufficiently to part the lips, and commences to breathe through the aperture thus formed. Mouth-breathing will also be produced by dental irregularities, as previously shown. Thumb-sucking is also productive of this pernicious habit. It is hardly necessary to point out the deleterious results of mouth-breathing; too much is not said, if it is stated that the upper half of the head does not develop properly in mouth-breathers. The upper respiratory apparatus also becomes predisposed to disease, as well as the faucial and Lushka's tonsils. The part played by oral sepsis in enlarging the tonsils will itself favor this dangerous habit.

Whatever may be said in regard to specific septic infection taking place through the mouth and teeth, there is no doubt as to the existence of secondary anemia, associated with lowered vitality and great foulness of the whole alimentary tract resulting directly from buccal infection. In such cases, not only is there local absorption of toxins through the mucous membrane of the mouth and the alveoli of the teeth, but the infection with staphylococci is a continuous process throughout the alimentary canal. Just as the remedy for chlorosis is said to consist in the cleansing of the lower end of the intestine, so it may be claimed that the cleansing of the mouth is of equal importance. It is a safe aphorism: Look after the ends of the alimentary canal and the middle will look after itself. . . .

The effects of swallowing quantities of putrid material are often associated with other symptoms besides disturbances of the alimentary canal.

The toxins are taken up by the lymphatics of the stomach and intestines and pass into the blood stream. Headache, nausea and vomiting may follow, sometimes accompanied by a rise of temperature, showing the symptoms of sapremia (due to the absorption of chemical substances, and in no sense of the word an infective condition).

In view of all this, why is it that the mouth is not cared for in the manner necessary to reduce the oral sepsis and its sequelæ? The reasons are that the busy general practitioner does not realize the importance of oral hygiene, the lack of knowledge of parents and guardians regarding these matters; and the remedy which will overcome these conditions is collaboration of the general practitioner, the specialist and the parents. The first step, I think, has been taken, in that the Board of Health has the mouths of children examined; now let the family physician take up this work, and the results will be of inestimable value to humanity at large.

The care of the mouth can be outlined in one sentence, namely, "Keep the mouth clean," which means: (1) To reduce oral sepsis as much as possible, (2) to render the buccal cavity alkaline, (3) to reduce dental caries, to avoid this as much as possible by frequent oral examinations and early filling, (4) to reduce inflammatory conditions and remove their local and systemic causes, (5) to avoid the untimely extraction of teeth, (6) to induce normal bodily functions to establish and maintain a physiological balance.

A very important step towards the reduction of buccal sepsis and its innumerable sequelæ would be the appointment of a stomatologist on every hospital staff, whose duty it would be not only to attend to emergency cases (as it is in a few hospitals), but also to make his regular rounds and create and maintain clean, healthy mouths. I believe it is of great importance that a patient who is to be operated upon, whether the operation be a laparotomy or any other surgical procedure, should not only, as is customary, have his bowels cleansed, but the other end of the tube, his mouth, should also be rendered as clean as possible.

The first step necessary would be an elimination of inflammatory processes and suppurative foci which exist so frequently. We all know what an ideal incubator, abundant in material favoring the production of sepsis, the mouth is. How many patients confined to bed with typhoid fever and other diseases of long duration have their mouths cleansed? How many sanatoria for the treatment of tuberculosis have a regularly attending dentist? This is not dentistry, but prophylactic medicine, and, after all, the greatest triumph of medical science is not the curing, but the prevention of disease.—*Medical Record.*

THE TOP AND THE BOTTOM.—There is plenty of room at the top and a big crowd at the bottom wanting to get there. The alert swing up by grasping an opportunity; the fortunate are "boosted" up by influential friends, the "plucky" make a ladder and climb, the plodders zig-zag up the hill, the easy-goers wait for luck to come their way, and are still waiting when the end comes.—*Dental Brief.*

DIGESTS OF ARTICLES WE OUGHT ALL TO KNOW ABOUT

ALCOHOL AND THE COMMUNITY

By Henry Smith Williams, M.D., LL.D.

Every dentist may share with the physician the vantage point of unusual influence upon the conduct of his patients. What he advises them to eat or drink or let alone, will come to them as "from one who speaks with authority." In the face of the wide-spread agitation concerning the use of alcohol, the information in this digest will be of especial interest. —Editor.

Alcohol has an affinity, not for any particular highly organized tissue of the body, but for protoplasm itself, which is the basis of all living matter. To gain a clear mental picture of its action on the body, one may liken the effect of alcohol circulating in the blood to that of a current of water coursing along the bed of a stream. Every portion of the bed of the stream is to some extent affected by the abrading force of the current. But some portions are affected far more than others. A granite boulder, for example, seems to escape almost unscathed; whereas a limestone surface is gradually cut and furrowed, and a sand bed or a muddy deposit may be swept away altogether. The difference is due not at all to the current of water, but to inherent differences in the surfaces acted upon.

In much the same way the alcohol circulating in the vascular currents of a human organism tends to attack one tissue and another. The precise effect, in the case of any given organism, depends upon the relative stability of the various tissues of that organism. If the cells of the liver, for example, chance to be relatively weak and susceptible, the liver will be the organ most conspicuously "attacked" by the alcohol. . . . It can hardly be said that alcohol singled them out for its attack; their inherent weakness is the cause of their destruction, just as the inherent softness of the sandbank explains its abrasion by the stream.

HOW ALCOHOL ATTACKS THE BRAIN

But note now an important application. The most unstable tissues of an organism are the most highly developed and complex tissues. . . . The most delicate and unstable of all organic tissues are the complex

central nerve-cells of the gray cortex of the brain—the cells directly associated with the exhibition of mental processes. These are the most delicately poised, the most easily disturbed in function, of all organic tissues. It follows that these are the tissues that come earliest and most persistently under the influence of the alcoholic poison. A given individual may have a highly susceptible liver or kidney or heart, through hereditary influences or through some peculiarity of his environment; but, in general, the brain—the organ of mind—is the organ whose tissues are most susceptible. So when the dissecting knife reveals, post-mortem, a hob-nailed liver or an alcoholic kidney, stomach or heart, it will almost invariably reveal also a shrunken and "watery" alcoholic brain. And in numberless cases in which all the other organs have seemed to present a granite-like resistance to the poison, the brain alone gives evidence of having yielded to the strain.

Experiments upon animals have fully corroborated these observations of the pathologist. Dr. Berkley made microscopical examination of the tissues of many rabbits suffering from acute intoxication, the animals being those used in Dr. Friedenwald's experiments, conducted at Johns Hopkins University, in behalf of the Committee of Fifty. Some of the animals had been given but a single large dose of alcohol. The one significant lesion that the microscope revealed in these cases was a lesion of central nerve cells and their processes. Within the substance of the affected cells, the granular matter normally present was visibly disintegrated. The delicate little fibrils that lead out from the cells showed irregular nodules or swellings not normally present, whereas their normal bud-like projections had partially disappeared.

Only a portion of the cells are affected in any given case; but the demonstrable changes begin to appear within a few minutes after the alcohol is taken. That such structural changes are associated with perversions of function, all along the line of the nervous and mental activities associated with the cells involved, no one can doubt.

ALCOHOL AND INSANITY IN AMERICA

The first definite question that presents itself in this connection is whether alcohol, in attacking the brain cells, produces or tends to produce such mental changes as constitute technical insanity. For answer we turn to the statistics of institutions for the insane and to the writings of alienists. There is nothing in the least uncertain about the character of the reply.

The latest Annual Report of the New York State Commission in Lunacy presents a colored diagram, showing at a glance the percentage

of insane patients known to have a history of alcoholism who were admitted during the current year to the State asylums. The colored portion representing alcoholics covers a full third of the entire area in the case of patients from the rural districts, and more than a third in the case of urban districts.

The asylum statistics of other States reiterate the same lesson. Considering the United States as a whole, it is variously estimated that from 25 to 30 per cent. of all the insane patients admitted to the asylums year by year owe their misfortune directly or indirectly to the abuse of alcohol. The statistics of other countries are closely similar. . . .

Dr. Clouston, Superintendent of the Royal Edinburgh Asylum, in Scotland, reports that 42 per cent. of the men and 18 per cent. of the women under his charge are victims of intemperance. He notes, it may be added, that these figures have more than doubled within the last thirty years; and in particular that drunkenness as a cause of insanity in women has increased of late years with unexampled rapidity—an alarming observation that is fully confirmed by Dr. Tuke's experience at the Royal Dundee Asylum.

Another famous British alienist, Dr. Theodore B. Hyslop, Physician Superintendent to the Royal Hospitals of Bridewell and Bethlem—the once notorious "Bedlam"—near London, comments as follows: "My own experience leads me to believe that alcohol is either a direct or an indirect factor in the causation of at least 50 per cent. of the cases of insanity." Speaking from a wide practical experience, Dr. Hyslop declares that "if we are to maintain our health, our morals and our sanity, we must set ourselves with renewed vigor to the task of averting disaster by overcoming the curse of alcoholism." . . .

The official returns from the Asylum of St. Anne, in Paris, for the period 1872-1885 show that of 31,733 insane patients, 28 per cent. of the men and less than 6 per cent. of the women owed their condition to alcoholism. But of the patients in the same institution in the year 1900, according to Dr. Legrain, no fewer than 51 per cent. of the men and 22 per cent. of the women were alcoholics.

The returns from that other stronghold of beer, the German Empire, are no less conclusive. Drs. Baer and Laquer report that in the asylums for the insane in Prussia, in the years 1880-1883, the proportion of alcoholics among the male patients was 30 to 32 per cent. In 1886 the proportion had risen to 35 per cent.; in 1887 to 37 per cent.; in 1888 to 40 per cent. Any error in the statistics as to the share of alcohol in producing insanity is sure to be on the conservative side, since many family histories will remain obscure after the fullest practicable investigation, whereas very few cases, indeed, will be ascribed to

intemperance unless there is clear and positive evidence of such ascription.

. . . Similar difficulties are to be met in determining the precise influence of alcohol upon other social conditions. The criminal and the pauper, for example, do not, as a rule, admit that their downfall was due to alcohol so long as they can conceal the fact; hence the statistics that deal with alcohol and crime and with alcohol and pauperism must be expected to lack something of complete reliability—but also to err only on the side of conservatism.

ALCOHOL AS A CHIEF CAUSE OF CRIME

. . . Now, it is a characteristic effect of alcohol to produce impairment of moral sense, while at the same time stimulating various lower propensities and passions. We might infer almost without argument, therefore, that an agent which inflames the passions and lowers the moral sense must make for the commission of crime. . . .

Few people fully appreciate the power of this agent to interfere with the orderly course of society. It is rather startling, for example, to read the declaration of the Lord Chief Justice of England that, "if sifted, nine-tenths of the crime in England and Wales could be traced to drink."

The famous investigation of the Massachusetts Bureau of Labor Statistics revealed the fact that 84 per cent. of all the criminals under conviction in the correctional institutions of that State owed "the condition which induced the crime" to intemperate habits. The investigation included the inmates of such minor correctional institutions as jails and workhouses, a very large proportion of whom were arrested for being "drunk and disorderly"; but if these were excluded, and attention confined to charges other than drunkenness, alcohol could still be made responsible for 50.88 per cent., or more than half, of all crimes. An almost identical result was reached quite independently by the investigators of the Committee of Fifty, who very carefully scrutinized the records of 13,402 convicts in seventeen prisons and reformatories scattered through twelve States. The investigation did not include ordinary jails, and therefore took no account of "persons convicted for mere misdemeanors, drunkenness or violation of the liquor laws."

. . . The average was 49.95 per cent., a percentage which the Committee puts forward with much confidence as representing "an approximate expression of the truth." It is very justly urged that the agreement between these figures and those of the Massachusetts

Bureau (as just cited) "is too striking to need further comment."

It is of interest to note that the institution whose inmates showed the lowest percentage of intemperance in the above cited investigation of the Committee of Fifty was Sing Sing Prison. At first glance this seems surprising, since this prison is recruited so largely from New York City. The explanation is found in the fact that only first-term men are sent to Sing Sing, which, therefore, "gets an unusual class of prisoners; in fact, a great many are from the higher walks of life, men in business and the professions, as well as trusted employees, etc." It is a matter of course that intemperance should figure as a relatively infrequent cause of crime among this class of prisoners; yet even here, as we have just noted, one man in four owes his fall to alcohol. Moreover, it is reported that "of 233 cases of convicts in the Sing Sing and Auburn prisons, Mr. Dugdale found that of those who had committed crimes against the person 40.47 per cent. were habitual drunkards, while of those convicted of crimes against property 38.74 per cent. were habitual drunkards. Of the former about 38 per cent. and of the latter about 43 per cent. came from intemperate families. Among 176 habitual criminals, 45.45 per cent. came from intemperate families and 42.46 per cent. were habitual drunkards."

. . . Let us seek to reduce to somewhat precise terms the relations existing between alcohol and the state of acknowledged dependency called pauperism.

The problem is an exceedingly complex and difficult one—quite impossible, indeed, of really accurate solution in the present state of sociological science. . . .

The results (of the Massachusetts investigation) show that in Massachusetts about 39 per cent. of the paupers in almshouses had been brought to their condition by the personal use of liquor, and that about 10 per cent. had come there through the intemperate habits of parents, guardians or others. Our figures, based upon almshouses throughout the country, give an aggregate of a little less than 33 per cent. of cases due to the personal use of liquor, and about 8.7 per cent. due to the intemperate habit of others.

. . . It appears, then, that about two-fifths of the paupers cared for in the almshouses of this country demonstrably owe their condition to alcohol.

THE DESTITUTE AND DESERTED CHILDREN

Yet another class of dependents came within the scope of the investigations of the Committee of Fifty—that most pitiable of all groups of

human derelicts, the destitute and neglected children. "It is estimated that in this country about 16,000 children annually are deserted by their parents." But this group, after all, is small compared with the vast army of children whose parents, though not actually deserting them, are unable or unwilling to give them adequate attention. Many of these are never brought within the ken of the statistician; others receive attention from societies for the prevention of cruelty to children and from such organizations as the National Children's Home Society. From the records of these institutions the statistics of the Committee of Fifty were compiled. The result is startling, even if not unexpected. It is revealed that "nearly 45 per cent. of the children harbored owed their destitution to the intemperance of parents, while nearly 46 per cent. owed their destitution to the intemperance of parents and others (guardians, etc.) together. The worst phase of poverty occasioned by drink is thus seen to be in the fact, not that the drinker himself suffers, but that innocent persons suffer still more."

It is fairly demonstrable, then, that, as a minimal estimate, about two-fifths of the paupers in almshouses, one-fourth of the seekers of charity outside almshouses, and almost one-half of the dependent children in America, owe their deplorable condition to alcohol.

. . . What is declared to be "much the most accurate investigation on record" in England was made by Alderman Alexander McDougall in the township of Manchester in 1883. The number of cases involved was relatively small, but the investigator himself interviewed each individual, and competent authority regards his results as absolutely conclusive for those particular cases, and, therefore, as typical of a large class. Pauperism was found to be brought about by causes directly arising from drinking habits in more than one-half (51.34 per cent.) of the entire number of cases, which included "persons in receipt of indoor relief drawn from all classes, persons in receipt of outdoor relief, inmates of the female lock wards and (a small number of) vagrants."

BY WAY OF SUMMARY

It will be observed that these estimates, ascribing from one-third to one-half of the recognized poverty of the Fatherland to the effects of alcohol, are singularly in harmony with the estimates made for England by British investigators and with the careful statistics compiled for America by the Committee of Fifty. Such correspondences cannot well be accidental. They give secure warrant for the belief that at least one-third of all the recognized pauperism in the most highly civilized communities of Christendom results from bodily and mental inefficiency

due to alcoholic indulgence. A similar correspondence of testimony shows, as we have seen, that the same cause is responsible for the mental overthrow of fully one-fourth of all the unfortunates who are sent to asylums for the insane; for the misfortunes of two-fifths of neglected or abandoned children; and for the moral delinquencies of at least half of the convicts in our prisons, and of not less than four-fifths of the inmates of our jails and workhouses. We have previously seen how alcohol adds to the death roll through alliance with all manner of physical maladies. Did space permit, it might be shown how largely the same common enemy is responsible for suicides and sudden deaths by accident in many lands, for the universal prevalence of venereal diseases with all that they imply, and for a large proportion of such cases of marital infelicity as find record in the divorce courts.

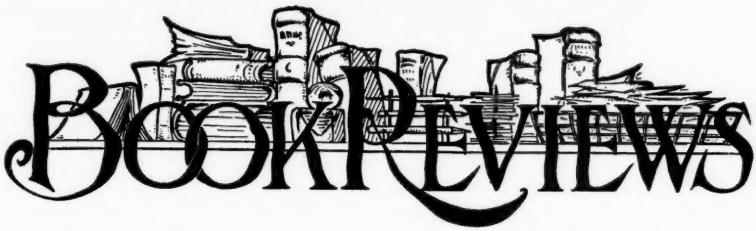
Let it be particularly borne in mind that the conclusions just presented as to the causal relation of alcohol to the production of each of these abnormal elements of society are as far removed as possible from mere sentimental estimates or pessimistic guesses. They are inductions based on careful surveys of evidence. Dealing with matters of great complexity, they are subject to a good deal of latitude, for reasons that I have given; but they are sufficiently precise to serve the purposes of reasonably secure scientific hypotheses. Considered as gauges of the misery caused by alcohol, our percentages are utterly inadequate, to be sure. There is a vast host of victims of alcohol that cannot be thus classified, as a moment's consideration will show.

For every individual that dies prematurely of a disease directly due to alcohol, there are scores of individuals that suffer to a lesser degree from maladies which are wholly or in part of the same origin, but which are not directly fatal.

For every patient that suffers complete mental collapse as the result of alcoholism, there are scores of patients that are the victims of epilepsies, neurasthenias, neuralgias, choreas and palsies of alcoholic origin. . . .

For every criminal that alcohol sends to prison, there are scores of persons whose moral delinquencies, induced or emphasized by alcohol, are not of the indictable order, yet are a source of suffering to their friends and a detriment to humanity.

For every incapable who, weakened by alcohol, acknowledges defeat in the life battle and openly seeks alms, there are scores of individuals that feel the pressure of want in greater or less degree because the money that might have supplied necessaries and luxuries has gone for drink, yet that strive to hide their indigence.—*McClure's Magazine.*



LECTURES ON GENERAL ANESTHETICS IN DENTISTRY. By WILLIAM H. DE FORD, B.A., D.D.S., M.D., M.A. John T. Nolde, St. Louis, Publisher.

A SENSIBLE and easily understood work which should be in the hands of every dentist who attempts to give a general anesthetic. The writer of this review is not so familiar with the works on general anesthetics as might be, but those which he has consulted seem to contain a large amount of matter which could have been put in much simpler form. This book is distinguished by the plain, informative way in which it is written, so that one who takes it up gains the desired information without being fatigued by things for which he has little interest. The writer has been informed that some dental colleges have placed this book on the list of text-books. All colleges would profit by doing so.

The lectures cover the following subjects:

Lecture I.—Has the Dental Surgeon the Right to Administer General Anesthetics?

Lecture II.—The Value of General Anesthetics to the Dental Surgeon.

Lecture III.—To Whom is it Safe to Administer an Anesthetic?

Lecture IV.—Elements of Danger.

Lecture V.—Shock.

Lecture VI.—Dental Fatigue.

Lecture VII.—Elements of Success.

Lecture VIII.—Relative Safety of General Anesthetics.

Lectures IX., X., XI., XII., XIII.—Nitrous Oxid.

Lecture XIV.—Ethyl Chlorid.

Lectures XV., XVI., XVII., XVIII.—Somnoform.

Lecture XIX.—Chloroform Analgesia.

Lecture XX.—Ether and Chloroform.

Lectures XXI., XXII.—Difficulties and Dangers Incident to Administering General Anesthetics in Dental Practice, and how to Meet Them.

THE DENTAL SALESMAN.—The dental salesman is to have his magazine as well as the dentist. There came to this magazine a natty little book, pocket size, entitled "*The Dental Salesman,*" published by The Ransom & Randolph Company, of Toledo, Ohio, for circulation among the traveling salesmen of the profession.

As a result of a number of years' acquaintance with dental salesmen, and very many pleasing acquaintances among them, the writer has a high opinion of them. They are as clean-living, hard-working and intelligent a group of men as the writer has seen in any trade. They deserve a magazine, and the writer is glad to see they are going to get it. He only hopes they will take enough interest in it to make it successful.

This magazine is cleverly written, and particularly well printed. We wish it all success.

G. W. C.

CORRESPONDENCE

A REPLY

TO THE EDITOR OF THE DENTAL DIGEST:

I ACCEPT the challenge of Dr. Spence, and in a few words venture to reply.

This matter of plaster expansion has to my mind been largely overdrawn, and lots of ink wasted in its behalf.

As I have often remarked that in my experience of sixty-four years of exclusive work in artificial dentures, the expansion of plaster has not given me any trouble, and the reason why, from my standpoint, is, as it appears to me, a very simple one. It is impossible for the plaster in a tray to expand against the flanges, and utterly impossible for it to bend the thick flanges, although Dr. Spence says it does, and the evidence is that, on removing the impression from the cup, it cannot be replaced.

It does not prove anything of the sort; if it cannot be replaced it shows expansion after removal.

As the plaster impression cannot expand *against* the walls of the tray, there is only one thing it can do, and that is to expand *inwardly*. No one can deny that. What follows? Why, simply contraction of the opening is the inevitable result. It seems to me nothing can be more simple. Consequently the plaster model from that opening is just that much smaller than the jaw, a trifle only.

Theories about the unequal expansion of impression walls of different thickness I will not discuss, for, like many theories, no proof can be adduced, and it is practically of no account, at least in my long experience.

By taking a plaster impression, satisfying myself it is correct, carefully filling and removing, building up with flaring sides, shellacing, placing the relief over the hard center, moulding, casting a Babbitt Metal die, I find the plate swaged on that die

fits the plaster model snugly, and as that represents the jaw, I find the plate fits the jaw snugly, without further attempts at fitting with pliers and burnishes.

L. P. HASKELL.

MARCH 3D, 1909.

TO THE EDITOR OF THE DENTAL DIGEST:

I wish to make a few objections to your article in the February DIGEST on the use of chloroform.

I think a dentist should use chloroform when he considers it necessary, and has just as much authority as the M.D. Because some dentists have been careless or ignorant in the use of this agent is no reason for holding the profession up as ignorant of what we all should know.

This article goes on to say that no competent surgeon would operate with the patient in any but the horizontal position. Such is true, and I don't think a competent man would think of giving chloroform in any other position. He would also make a careful examination as to the patient's fitness for taking an anesthetic and take all precautions for the patient's safety. Should a doctor not take these precautions he would certainly be guilty of criminal carelessness. In reply to his saying "The dentist would get down a can of chloroform of doubtful age," and "The dentist would lay aside the anesthetic and do the extracting." Now, for a man to do either of these acts, he is not fit to be called a dentist, and has no place in the profession.

It is not considered proper among our M.D's to give an anesthetic at the same time, and is only done in emergency cases.

In closing, let me say that if a dentist does not know how to use an anesthetic, let him associate with the M.D's until he does, and then when he has a call for such use he will know how to respond to the call in a creditable manner.

Let us suppose a case of accident when you were present and you were asked to give an anesthetic, what would you do—acknowledge your ignorance, or go in blind and get a call down by the operator?

By all means learn how to use anesthetics so you can do your part at any time or place.

G. B. SPEER, D.D.S.,
Los Angeles, Cal.

NOTICES

ALUMNI ASSOCIATION OF ATLANTA DENTAL COLLEGE

THE Meeting of the Alumni Association of the Atlanta Dental College will be held in the Operatory of the College, April 3, 1909. A large number of clinicians, selected principally from the Alumni, will be present.

SOUTHERN WISCONSIN DENTAL ASSOCIATION

THE Fifteenth Annual Meeting of the Southern Wisconsin Dental Association will be held in Beloit, Wis., June 3 and 4, 1909.

THE NORTHERN DENTAL ASSOCIATION

THE Fifty-second Annual Meeting of the Northern Ohio Dental Association will be held in the Central Young Men's Christian Association Building, Cleveland, O., June 1, 2, 3, 1909.

DENTAL SOCIETY OF THE STATE OF NEW YORK

THE Forty-first Annual Meeting of the Dental Society of the State of New York will be held in Albany, Thursday, Friday and Saturday, May 6th, 7th and 8th, 1909. Sessions will be held in Odd Fellows Hall, and will convene promptly at 7.30 P.M., on the evening of Thursday, May 6th.

INTERSTATE DENTAL FRATERNITY

THE Annual Meeting of the Interstate Dental Fraternity of United States and Canada, will be held at Birmingham, Ala., during the session of the American Dental Association. The meeting will be in charge of R. H. Welsh, Secretary of the I. D. A. for Louisiana.

R. M. SANGER, *National Secretary.*

KENTUCKY STATE DENTAL ASSOCIATION

THE Thirty-ninth Annual Convention of the Kentucky State Dental Association will convene at Crab Orchard Springs, Ky., May 17, 18 and 19, 1909.

We anticipate a most interesting and profitable meeting at this most popular central Kentucky resort. A cordial invitation is extended to all ethical members of the profession.

W. M. RANDALL, *Secretary.*

LOUISIANA STATE DENTAL SOCIETY

THE Thirty-first Annual Meeting of the Louisiana State Dental Society will be held at the St. Charles Hotel, in New Orleans, La., on Wednesday, Thursday and Friday, April 28, 29 and 30, 1909.

An interesting program is already assured.

A most cordial invitation is extended to all ethical members of the profession to be present and participate in the meeting.

DR. H. J. FELTUS, *President,*
Baton Rouge, La.
DR. J. P. WAHL, *Chairman Executive Committee,*
New Orleans, La.
DR. A. L. PLOUGH, *Corresponding Secretary,*
New Orleans, La.

NEW HAMPSHIRE AND VERMONT DENTAL SOCIETIES

THE Joint Meeting of the New Hampshire and Vermont Dental Societies will be held at Weirs, New Hampshire, May 18 to 21, 1909.

PENNSYLVANIA BOARD OF DENTAL EXAMINERS

THE Pennsylvania Board of Dental Examiners will conduct examinations simultaneously in Philadelphia and Pittsburg, June 9, 10, 11 and 12, 1909.

For application papers, or any other information, write to DR. NATHAN C. SCHAEFFER, *Secretary,* Dental Council, Harrisburg, Pa.

EASTERN INDIANA DENTAL ASSOCIATION

THE 1909 Meeting of the Eastern Indiana Dental Association will be held in Marion on May 8 and 9.

The 1908 meeting was postponed that all might join in the big jubilee State meeting, and this one is expected to be a record breaker. Clinics are to be the special feature.

LEONARD STRANGE, *President.*

TENNESSEE STATE DENTAL ASSOCIATION

THE Forty-fourth Annual Meeting of the Tennessee State Dental Association will be held in Memphis, Tenn., May 25, 26, 27, 1909.

CONNECTICUT DENTAL COMMISSIONERS

THE Dental Commissioners of Connecticut will meet at Hartford June 24, 25, 26, 1909, to examine applicants for license to practise dentistry.

GILBERT M. GRISWOLD, *Recorder.*

VIRGINIA STATE DENTAL ASSOCIATION

THE Fortieth Annual Session of the Virginia State Dental Association will be held at The Mecklenburg, Chase City, Va., July 21, 22 and 23, 1909. Every effort is being made to make this the most interesting and successful meeting of our Society. Men of national reputation will give clinics and read papers. All ethical practitioners are cordially invited to attend.

W. H. PEARSON, *Corresponding Secretary.*

NORTH CAROLINA DENTAL SOCIETY

THE Thirty-fifth Annual Meeting of the North Carolina Dental Society will be held at Asheville, N. C., June 23 to 26, 1909.

The Battery Park Hotel will be headquarters. All ethical dentists are cordially invited to attend.

J. C. WATKINS, *Secretary,*
Winston-Salem, N. C.

MISSOURI STATE DENTAL ASSOCIATION

THE Forty-fourth Annual Meeting of the Missouri State Dental Association will convene at Kansas City, Missouri, May 26, 27 and 28, 1909.

A good, live program is in course of preparation.

J. F. WALLACE, *Corresponding Secretary.*

Executive Committee:

C. C. ALLEN, *Chairman,* Kansas City.
F. G. WORTHLY, Kansas City.
D. D. CAMPBELL, Kansas City.

IOWA STATE DENTAL SOCIETY

THE Forty-seventh Annual Meeting of the Iowa State Dental Society will be held in Des Moines, Iowa, May 4, 5 and 6, 1909. All ethical dentists are urged to attend.

T. F. COOKE, *Secretary.*

SOUTHWESTERN MICHIGAN DENTAL SOCIETY

THE Southwestern Michigan Dental Society holds its annual meeting in Kalamazoo, April 13th and 14th, Burdick Hotel, headquarters. Chamber of Commerce, place of meeting. All ethical dentists cordially invited.

DR. C. W. JOHNSON, *Secretary.*

KENTUCKY STATE BOARD OF DENTAL EXAMINERS

THE Kentucky State Board of Dental Examiners meets the first Tuesday in June, at 8 A.M., in the Louisville College of Dentistry, for the examination of applicants for certificate.

All applicants must be graduates of a reputable dental college.

Application blanks for examination will be furnished by the secretary on request, which, with the fee of $20, must be in his hands 10 (ten) days before date of examination.

J. RICHARD WALLACE, D.D.S., *Secretary,*
The Masonic, Louisville, Ky.

ALUMNI CLINIC OF WASHINGTON UNIVERSITY DENTAL DEPARTMENT

THE Annual Alumni Clinic of Washington University Dental Department will be held at the College Building, Twenty-seventh and Locust Streets, on March 29th and 30th. We hope to make one of the largest Alumni meetings ever held, and also hope that the attendance will be in proportion. Any sacrifice that you will be compelled to make to attend this meeting will be repaid by the benefit you receive therefrom.

TENNESSEE BOARD OF EXAMINERS

THE next regular Annual Meeting of the Tennessee State Board of Dental Examiners will be held at Nashville, Tenn., May 18 to 21, 1909. Examinations will be held in all branches taught in dental colleges. All applications for examinations must present diplomas from reputable dental colleges, and applications for examinations should be made to the Secretary ten days prior to the meeting.

Examination fee, $10.

F. A. SHOTWELL,
Secretary and Treasurer,
Rogersville, Tenn.

NATIONAL ASSOCIATION OF DENTAL FACULTIES

THE National Association of Dental Faculties will hold their annual meeting in connection with the National Association of Dental Examiners in the Hotel Chamberlain, Old Point Comfort, Va., August 2, 3 and 4, 1909, commencing at 10 A.M.

Hotel rates the same as the National Association of Dental Examiners. Railroad and steamship rates given at a later date.

B. HOLLY SMITH, D.D.S.,
Chairman of the N. A. D. F.

ALUMNI ASSOCIATION OF ST. LOUIS DENTAL COLLEGE

THE Alumni Association of the St. Louis Dental College (formerly Marion-Sims) will hold their annual clinic at the college building, Grand Avenue and Caroline Street, on Thursday and Friday, May 20 and 21, 1909.

An excellent program is being prepared. All ethical members of the profession are cordially invited to be present.

DR. S. T. MCMILLIN,
President.

DR. JOHN B. O'BRIEN,
5761a Etzel Avenue,
Chairman Publicity Committee.

ILLINOIS STATE DENTAL SOCIETY

THE Forty-fifth Annual Meeting of the Illinois State Dental Society will be held at Danville, May 11, 12, 13, 14, 1909.

R. J. HOOD, *Secretary,*
Sparta, Ill.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS

THE Twenty-seventh Annual Meeting of the National Association of Dental Examiners will be held at the Hotel Chamberlain, Old Point Comfort, Va., first session opening at 10 o'clock A.M., Monday, August 2, 1909, and continuing the 3d and 4th.

The result of the mail vote by the committee to ascertain the consensus of opinion as to place and date from October 19th to the present date was ninety-one votes for Old Point Comfort the first three days of August, thirteen for Birmingham in March, seven for Birmingham in July. The president has therefore selected Old Point Comfort.

The rates will be, American plan, $3 per day, without bath; $4 per day, with bath. Large and commodious meeting rooms will be furnished free. Railroad and steamship rates will be furnished at a later date.

CHARLES A. MEEKER, D.D.S., *Secretary.*

SEVENTH DISTRICT DENTAL SOCIETY OF NEW YORK

THE Seventh District Dental Society of the State of New York will hold its annual meeting in Rochester, N. Y., on the 16th and 17th of April at the Seneca Hotel.

Plans are under way to make this the largest and most attractive meeting in various points of interest, which has ever been held in New York State, and all dentists within a radius of three hundred miles will be greatly benefited by coming. There will be a large number of clinics at the chair and also table clinics, and several interesting papers will be read.

The manufacturers of dental instruments and supplies will also aid in making this a large meeting, and a most cordial invitation is extended to all who come.

Business Committee,
LEWIS S. GOBLE,
E. L. SCHLOTTMAN,
C. A. THORN,
C. W. LASALLE,
Rochester, N. Y.

SUSQUEHANNA DENTAL ASSOCIATION OF PENNSYLVANIA

THE Annual Meeting of the Susquehanna Dental Society will convene at the Oneonta Hotel, Harvey's Lake, May 18th, 19th and 20th. This meeting has always been largely attended, and as Harvey's Lake is a popular place and centrally located, the society expects to outdo its previous records.

The Exhibit Room will be a big feature this year, and those desiring space will do well to engage it early, as some firms have already spoken for space. All applications for such should be addressed to the undersigned as soon as possible.

FULLER L. DAVENPORT,
34 North Franklin Street, Wilkes-Barre, Pa.

Exhibit Committee:
F. L. DAVENPORT, *Chairman.*
A. E. BULL.
WALTER RICHARD.

TEXAS STATE BOARD OF DENTAL EXAMINERS

THE regular meeting of the Texas State Board of Dental Examiners will be held in Waco, Texas, beginning 9 A.M. Monday, June 14, 1909. Diplomas not recognized, or registered; examinations required of all. Applications, accompanied by a fee of $25, should be in the Secretary's hands June 10th. For further information, address

BUSH JONES, *Secretary,*
Dallas, Texas.

NEW JERSEY STATE BOARD OF REGISTRATION AND EXAMINATION IN DENTISTRY

THE New Jersey State Board of Registration and Examination in Dentistry will hold their semi-annual examination beginning Tuesday, July 6th, and continue through the 7th and 8th, in the Assembly Chamber of the State House at Trenton, N. J. Practical examination on the 6th, and theoretical examination 7th and 8th. Sessions begin promptly at 8 A.M. each day. Candidates requested to bring their patients.

Practical work consists of one gold filling and one amalgam. Gold filling must be approximal with an approximating tooth in position, and soldering of plate. A photograph and preliminary credentials must accompany the application.

Application to be in the hands of the Secretary ten days prior to the examination.

CHARLES A. MEEKER, D.D.S.,
Secretary of Dental Commission,
29 Fulton Street, Newark, N. J.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS

THE next regular meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practise dentistry in the State of Illinois will be held in Chicago at the Chicago College of Dental Surgery, S. E. corner Wood and Harrison Streets, beginning Thursday, June 10, 1909, at 9 A.M.

Candidates will be furnished with proper blanks and such other information as is necessary on application to the Secretary. All applications must be filed with the Secretary five days prior to the date of examination. The examination fee is twenty ($20) dollars, with the additional fee of five ($5) dollars for a license.

Address all communications to

J. G. REED, *Secretary,*
1204 Trude Building, Chicago, Ill.

PROGRAM OF AMERICAN MEDICAL ASSOCIATION, SECTION ON STOMATOLOGY

MEETING AT ATLANTIC CITY, JUNE 8-11, 1909

1. Chairman's Address.....Edward C. Briggs, Boston, Mass.
2. Enamel and its Vitality.....R. R. Andrews, Cambridge, Mass.
3. A Study of Mal-nutrition in the School Child.....E. Mather Sill, New York City
4. Suppression of the People's Disease.....S. B. Luckie, Chester, Pa.
5. The Role of the Teeth in Respiration.....F. L. Stanton, New York City
6. Oral Prophylaxis.....Alphonse Irwin, Camden, N. J.
7. The Tonsils and the Teeth.....G. Hudson-Makuen, Philadelphia, Pa.
8. Mouth Conditions in their Relation to Systemic Infection,
Frederick K. Moorehead, Chicago, Ill.

(*Continued on next page*)

9. The Surgery of Cleft Palate.....George V. I. Brown, Milwaukee, Wis.
10. General Therapeutics and Surgery in Dentistry,
Arthur R. Dray, Philadelphia, Pa.
11. Conservative Surgery for Treatment of Tumors of the Mandible,
Thomas L. Gilmer, Chicago, Ill.
12. A Method of Treating Mandibular Fractures,
Robert T. Oliver, West Point, N. Y.
13. The Treatment of Extreme Degrees of Mal-occlusion of the Teeth by Operations Upon the Ramus of the Inferior Maxillary Bone,
Wayne B. Babcock, Philadelphia, Pa.
14. Osteomylitis of the Jaw.....H. H. Germain, Boston, Mass.
15. Report of two Record Tertiary Cases.....G. Lenox Curtis, New York City
16. Tri-facial Neuralgia.....Fred Hussey, Providence, R. I.
17. Anesthesia.....L. C. Noel, Nashville, Tenn.
18. A Summary of Thirteen Thousand Nitrous Oxid and Oxygen Anesthetics,
Charles K. Teter, Cleveland, O.
19. Pseudo-pulpitis Due to Rheumatoid Arthritis.....William Mills, Baltimore, Md.
20. Dental Roentogenology.....G. E. Pfahler, Philadelphia, Pa.
21. Report of the Committee of Revision of Pharmacopœia,
Hermann Prinz, *Chairman*, St. Louis, Mo.
G. B. Squires, Somerville, Mass.
22. Report of the Committee on Vital Statistics,
George V. I. Brown, *Chairman*, Milwaukee, Wis.
Vida A. Latham, Chicago, Ill.
Frederick K. Moorehead, Chicago, Ill.

EDWARD C. BRIGGS, *Chairman.*
EUGENE S. TALBOT, *Secretary.*

OBITUARY NOTICES

ALLISON WRIGHT HARLAN, M.D., M.A., D.D.S.

DR. ALLISON WRIGHT HARLAN was born near Indianapolis, Ind., November 15, 1851. His first years were spent on the farm, and his schooling was obtained in the public schools of Indianapolis. At the age of seventeen he entered the dental office of Kilgore & Helm, thus beginning the career which was to make his name known to practically all English-speaking dentists, and to many who speak in other tongues. He remained in this office until he went to Chicago in March, 1869. Here he was associated with Dr. Bell, and later with Dr. Baker. After this he opened an office for himself in the downtown section of Chicago. With many others, his office was consumed by the big fire of 1871.

The early years of Dr. Harlan's career were characterized by those qualities which were to make him famous. In this respect they may well be both an example and an encouragement to young dentists of to-day. He was a close student, a keen observer, and a hard worker, not for his own advantage alone, but for the interests of his profession. He early identified himself with Dental Society work, both local and State. His interest and fame spread, and he was made an honorary member of several State societies.

In 1882 Dr. Harlan was active in organizing The Odontological Society, and took an interested part during his residence in Chicago. In 1886 he established *The Dental Review*, and for many years was its editor.

Dr. Harlan was one of the founders of The Chicago College of Dental Surgery, and for many years was professor of materia medica. He was also a prolific writer on this subject, and much of the credit for the advancement in dental medicine belongs to him. In the minds of many, Dr. Harlan stands as the Father of Dental Medicine.

He was one of the organizers of the Internationale Federation Dentaire, was Secretary of the World's Columbian Dental Congress, held in Chicago in 1893, and was President of the Illinois State Dental Society, the American Dental Association and the Chicago Dental Society.

Dr. Harlan spoke both French and German. He traveled extensively in Europe, where his talents received liberal recognition. He studied in Paris and at Cambridge, England. He received presents from Emperor William and Prince Bismarck.

In 1902 Dr. Harlan removed to New York and engaged in the practise of his profession. In that city he died, March 6, 1909.

At the age of eighteen Dr. Harlan married Eliza Murison; in 1902 he married Mary E. Gallup, who survived him. He leaves a family of grown children.

Dr. Harlan exhibited many noble characteristics, prominent among which were his interest in and encouragement of young practitioners of dentistry, and his many kind acts toward professional friends who were no longer able to earn livings. As the years give us clearer perspectives, many kind words will be spoken for the labors of Allison Wright Harlan.

FREDERICK WILLIAM SCHLOENDORN, D.D.S.

Dr. Frederick William Schloendorn, a leading dentist of Baltimore city, died of Bright's disease, on March 5, 1909. He was in the prime of life, devoted to his profession, and beloved by his colleagues, his family and his numerous friends. Dr. Schloendorn was born at Bad Rehburg, in Hanover, Germany, January 22, 1860. The inspiration for his lifework he received from his father, a family physician of the old type. Frederick William, born with a wonderfully deft hand, who in his father's absence frequently bandaged a wound or set a broken limb, dreamed of becoming a surgeon; but circumstances favored a different channel for his activity. An early opportunity was offered in the field of dentistry, and he became the assistant of Dr. Flörcke in the city of Bremen, who had an enormous practice in town and country. Flörcke's magnetic personality impressed the young man, who quickly acquired his master's mechanical skill and remembered also his ways of dealing pleasantly with many varieties of the human kind. During those years Frederick William Schloendorn also completed his term of military service. Wishing to learn the methods of American dentistry, he came to the United States in 1888, and entered the Dental College of the University of Pennsylvania. In the following year he changed to the University of Maryland, and was graduated from there with the Class of 1889. A number of beautiful specimens of his work were presented to the museum of that institution.

Dr. Schloendorn meant to remain in Baltimore but a short time, before returning to Bremen, but his immediate professional success, the advice of friends, and finally his marriage, induced him to locate permanently in Baltimore. A number of very difficult operations in surgical dentistry quickly gained for him the esteem of the physicians of the Johns Hopkins Hospital and University. He showed originality in the treatment of teeth and in the filling of root canals, and proved the courage of his convictions. His particular specialty was crown and bridge-work, and in this department he may be regarded as the pioneer in Baltimore, who, in the face of opposition and doubts, proved the permanent value of this forward step in modern

dentistry. In his earlier years he executed every mechanical detail with his own hand, and later, when his practice grew so that he was compelled to work with two assistants, he still studied and watched every detail. Every piece of bridge-work that left his office combined with expert mechanical skill the touch of the surgeon and the finish of the artist. Dr. Schloendorn loved his work; he breathed his soul into it, he inspired those about him. In appearance he was a man of fine physique, of impressive personality, and his friends will long remember his good-fellowship, his buoyancy, and his fairness toward the attainments of others.

DEATHS

T. W. ALLEN, aged 42, died at his home in Vincennes, Ill., February 26, 1909.

J. A. TURNER, a dentist of Dyersburg, Tenn., died suddenly February 24, 1909.

A. L. KILLMER, a dentist of Bay City, Mich., died February 26, 1909.

JAMES A. DONALDSON, aged 61, a dentist of Greenwich, Pa., died February 27, 1909.

HENRY HURLBURT READ, aged 78, died February 22, 1909, at his home in Shelburne, Vt.

JOHN H. DOWNES died at his home in Brooklyn, March 9, 1909. Dr. Downes had practised dentistry for many years. His death was the result of internal injuries from a fall down a flight of stairs three months ago.

DR. W. P. TUCKER, 70 years of age, of Leavenworth, Ind., and an ex-captain of United States Cavalry, died March 13 of pneumonia. Dr. Tucker had practised dentistry in Los Angeles for the past twenty-five years, and had been a prominent member of the Loyal Legion of Honor.

NEWS SUMMARY

ALTENBURG IN BUSINESS.—H. Q. Altenburg, who was connected with Ransom & Randolph Dental Company, in this city, for a number of years, and who some time ago moved to Kansas City, has purchased, with W. V. B. Ames, of Chicago, the business of the John T. Nolde Dental Manufacturing Company, of Kansas City, and organized a company, to be known as the Ames-Altenburg Dental Supply Company, with Mr. Altenburg as manager.—*Toledo Blade.*

FALSE HAIR AND TEETH WORN BY PEOPLE WHO LIVED 7,000 YEARS AGO.—That false hair and false teeth are by no means modern inventions, but were used in the "B.C." period has been proved by Professor Waldstein, of Cambridge, one of the greatest authorities on archæology.

"Excavations in Egypt," says the professor, "have established beyond a doubt the fact that false hair was worn 5,000 years before the Christian era.

"False hair in a perfect state of preservation, attached to a kind of braid by

which it could be fastened to the natural hair, and complete with curls and ringlets, can be seen at the Edwards Library at University College.

"In explorations in Greece," continues the professor, "I have come across a perfect set of false teeth, made very much on the same plan as our dentists adopt to-day. And these teeth were actually gold-filled, although they probably dated back to the fourth century B.C."—*Chicago Examiner.*

APPLETON DENTIST GIVES CLINIC AT ANNUAL MEETING.—Among the dentists who, at Fond du Lac, March 9th, presented clinics at the annual meeting of the Fox River Valley Dental Society was Dr. W. E. O'Keefe, of Appleton. Dr. O'Keefe said in part as follows:

"Acolite is a new or comparatively new metal produced for the specific purpose of restoring broken down or lost tooth structure. Its color is a silvery white, and after over two years of use seems to be absolutely unaffected by oral secretions. The metal seems to retain its color much better than silver, and where large fillings in posterior teeth are indicated it answers the purpose admirably. In cases where roots are badly broken down and there seems to be nothing left but extraction, they may be restored and mounted with porcelain crowns by the use of this metal. There are numerous uses to which this metal can be put in casting, and it seems to have been brought before us at just the right time, thereby supplying a long-felt want in modern dentistry."—*Appleton Post.*

CENTRAL WISCONSIN DENTISTS PERFECT ORGANIZATION IN WAUSAU YESTERDAY.—The Central Wisconsin Dental Society, organized last fall as a temporary organization, was perfected at the meeting held in March. It was a very successful meeting, all charter members being present. Five new members were admitted, they being Drs. Harrington and Lind, of Marshfield; Dr. Sayles, of Grand Rapids; Dr. McFarlane, of Tomahawk, and Dr. Hirscher, of Merrill.

The temporary officers were made permanent. They are: President, B. H. Conlin, Wausau; Vice-President, W. A. Heaton, Marshfield; Secretary-Treasurer, Dr. J. McKahan, Wausau.

Dr. E. B. Owen, M. S. Van Ostrum, Merrill, and Dr. A. B. Crawford, of Edgar, were appointed as an executive committeee.

Wausau was chosen as the home of the society. Meetings will be held here semi-annually on the first Tuesdays of March and October.—*Wausau Herald.*

NEW INCORPORATION.—A certificate of incorporation of the Trenaman Dental Manufacturing Company, of the village of Sea Cliff, has been filed with the State Department. The capital stock is placed at $50,000, divided into shares of $100 each, and the directors are: Joseph Trenaman and T. F. Drack, of New York city, and Caesar Simis, of Sea Cliff.—*Long Island Star.*

MERCER MAN WINS PRESIDENCY OF WESTERN PENNSYLVANIA SOCIETY.—The principal features of the closing day of the twenty-eighth annual meeting of the Odontological Society of Western Pennsylvania at the Monongahela House were reading of papers on matters of interest in connection with the profession and the election of officers.

Dr. A. C. Reinhardt, of Pittsburg, presided. Those presenting papers were Dr. F. D. Woodbury and Dr. Spargur, of Cleveland, and Dr. J. F. Biddle, of Pittsburg. After the papers were read discussions followed, in which the 200 members present took part.

The election of officers resulted: President, Dr. J. D. Whitman, Mercer, Pa.; Vice-President, Dr. W. H. Fundenberg, Pittsburg; Secretary, Dr. B. M. Loar, Mt. Pleasant, Pa., and Treasurer, Dr. C. C. Taggart, Pittsburg.—*Pittsburg Dispatch.*

STAFF CHOSEN.—Dr. Joseph Duane, Dr. W. T. Brown and Dr. L. R. Snowden, dentists, have been chosen to compose the staff for the Peoria St. Francis Hospital.—*Peoria Journal.*

DR. CUSTER SEEKS PLACE ON STATE DENTISTRY BOARD.—Dr. N. B. Custer, prominent dentist, is a candidate for appointment to the State Dental Board. In company with N. P. Ramsey, of Dayton, he called on Governor Harmon regarding the matter.—*Dayton (Ohio) Herald.*

DR. WOOLSEY TO PRACTISE DENTISTRY AT KREMMLING.—Dr. C. G. Woolsey, who for the last five years has been prominent in musical circles in Colorado Springs, left last week with his family for Kremmling, where he is to engage in the practise of dentistry.—*Colorado Springs Gazette.*

DENTISTS WILL HAVE PAPER.—At the meeting of the Lackawanna and Luzerne Dental Association, held at the home of Dr. R. R. Luce, of Mulberry Street, a movement was started for the organizing of a company to print an independent dental journal for this part of the State.

The idea was so favorably received that it is probable that a journal of this kind will be printed in the near future.—*Scranton Tribune.*

DENTISTS GATHER AT BANQUET BOARD.—A six-o'clock dinner was given at the Beckel Hotel Monday evening, March 1st, by the Miami Valley Dental Society. Talks were given by Dr. N. A. Hubbard and Dr. N. B. Cutter. The organization will elect new officers on the first Monday in April.—*Dayton News.*

NEW TREASURER OF ASSOCIATION IS A PHILADELPHIAN.—The Dental Manufacturers' Association, in convention at Rochester, elected these officers: President, C. O. Rother, Buffalo; Vice-President, J. F. Frantz, New York; Treasurer, James Whittington, Philadelphia; Secretary, W. H. Mesdale, Columbus, O.—*Philadelphia Ledger.*

DENTISTS PLAN FOR ANNUAL BANQUET.—The local dental society had an interesting meeting in March in the office of Dr. R. W. Hood in the Searles Building. Dr. W. J. Brady, of Kansas City, a noted specialist, gave a fine talk before the society. Arrangements were made for the annual banquet of the society, which is to be held on the second Monday of April.—*Monmouth (Ill.), Review.*

IOWA CITY.—The Dental Faculty Association of American Universities has been organized with a membership of the University of Iowa, University of California, Harvard, University of Pennsylvania, University of Michigan, and the University of Minnesota. The constitution is being adopted and the first meeting will be held next summer, probably in the East. The object of the new organization is to promote dental education and science. It will be strictly on a pedagogical basis. Dean W. S. Hosford, of the local College of Dentistry, has been prominent in the formation of the new association.—*Union (Ia.) Advertiser.*

DENTISTS AT IOWA CITY, IA.—Dr. W. H. G. Logan, of Chicago, gave three lectures in March, before the third semi-annual meeting of the Pathological Study Club of the Iowa State Dental Society. He talked on Pathology in its relation to dentistry. There were twenty-two dentists in attendance.

The present officers of the club are: Dr. T. R. James, of Fairfield, president; Dr. J. A. Kaufer, of Burlington, vice-president, and Dr. W. C. Boone, of Ottumwa, secretary and treasurer.—*Des Moines (Ia.) Capital.*

FOX RIVER DENTISTS UNFAVORABLE TO MERGER.—The eighth semi-annual convention of the Fox River Valley Dental Society convened here Tuesday, March 9th, with fifty members in attendance.

The address of welcome was given by Dr. J. L. Blish, of Fond du Lac, the president, and the principal papers were by F. R. Houston, Green Bay; Adolph Gropper, Harvey N. Jackson, M. N. Federspiel, Milwaukee; M. L. Christiansen, Oshkosh; J. E. McCarthy, Lomira; W. M. Post, Neenah, and G. A. Stratton, Oshkosh.—*Milwaukee Sentinel.*

DENTISTS HOLD MEETING.—The monthly meeting of the Houghton County Dental Association was held in the parlors of the Arlington Hotel Monday evening, March 8th. The attendance was smaller than expected, but the results of the meeting were gratifying to those present. Supper for the tooth extractors was served by Proprietor Shea.—*Hancock (Mich.) Journal.*

DRS. ROSS AND SPRATLEY WILL HEREAFTER PRACTISE TOGETHER.—A new professional firm, but one that is composed of practitioners whose names are not new in Bellingham's professional directory, has been formed by Dr. H. W. Spratley and Dr. E. E. Ross, who will hereafter practise dentistry under the firm name of Drs. Ross & Spratley. At present they occupy the suite of apartments in the Exchange Block heretofore occupied by Dr. Ross, but upon the completion of the Alaska Building they move into new quarters now being fitted especially for their use by the builders of that block. No expense is being spared to fit their new quarters with every convenience and appliance known to modern dental science. Their suite of offices will be on the Holly Street front.

Dr. Spratley was formerly manager of the Atlas Dental Company.—*Bellingham Herald.*

TO DO AWAY WITH FAKE DENTAL OUTFITS.—The Senate, on March 6th, passed Bill No. 71, by Fuller, for the creation of a State Board of Dental Examiners. The main purpose of this bill is to promote the profession of dental surgery, and particularly to clip the wings of concerns which use questionable methods, both in the practice of the science and in the use of grotesque figures, animate and inanimate, to attract the attention of him who suffers from the toothache.—*Salt Lake City Herald.*

DR. GRIM READS A PAPER BEFORE DENTAL SOCIETY.—The members of the Reading Dental Society held the March meeting at the office of Dr. Morris R. Adam, 639 Penn Street, on Thursday evening, March 4th. The name of Dr. K. N. Yoder was proposed for membership of the first class, and he was unanimously elected.

Dr. Charles E. Grim read an interesting paper. A general discussion followed, in which all present participated. The next meeting-place was not decided upon. The essayist will be Dr. Morris R. Adam.

The following answered roll-call: W. H. Scholl, E. V. Kratzer, C. R. Scholl, W. D. DeLong, H. K. Bohn, E. W. Bohn, S. E. Tate, George S. Schlegel, William Meter, Charles E. Grim, Otto J. Specker, John T. Bair, M. U. Gerhard, M. R. Adam, M. B. Shuman, G. F. DeLong, C. B. Grim and R. F. Schealer.—*Reading Eagle.*

ANATOMICAL ARTICULATION IS COMING.—A lively discussion on the subject "Anatomical Articulation of the Teeth," was entered into by a large number of Hamilton dentists, members of the Hamilton Academy of Dental Surgery, when the regular meeting of the association was held, in the offices of Dr. P. A. Krucker, on Friday, February 26th.

Dr. F. E. Fischer, of Camden, was present, and read a paper and gave a demonstration on the subject discussed.

Following the business meeting, a delightful smoker was enjoyed.—*Hamilton (Ohio) Sun.*

CONTENTS FOR MAY, 1909

SMILES AND FROWNS

IF I knew the box where the smiles are kept,
No matter how big the key,
Or strong the lock, I'd try so hard—
I'm sure it would open to me.

And over the land and sea broadcast,
I'd scatter the smiles to play,
That the faces of workers might hold them fast
For many and many a day.

If I knew a box big enough to hold
All the frowns I meet,
I'd try to gather them every one,
From office, and home, and street.

And folding and holding,
I'd pack them in,
And turn the monster key,
And get some giant to sink the box
In the deepest part of the sea.

ADAPTED